ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE

VOLUME 25

EXECUTIVE EDITORS
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PUBLISHERS AND THE LIBRARY

Traditionally librarians have seen themselves as essentially passive partners in the publishing process. Someone else would decide what was written, whether it was published, and even how long it stayed in print. When publishers thought about library buying at all they thought of it as a welcome extra but hardly as a decisive factor. And in archival areas libraries were pretty much victims of circumstance, limited to what could be found in the OP (out-of-print) market, or those books acquired by bequest.

All that has changed. Not only has library buying power risen to the point where virtually anything that libraries want, can and will be published for them—whether anyone else wants it or not—but reprint costs have dropped to the point where OP books are being brought back into print even if only a few research centers want them. Libraries, far from playing passive roles in present-day publishing, are playing more and more decisive roles—certainly in such areas as children's books and reference books, but also in areas of audiovisual materials, microforms, and automation.

In some cases libraries may not even know their own strength, and sometimes become innocent accessories to misuse of public money. By this time any librarian can think of cases where some colleague has privately confided that he would not think of spending the library's own money on some new gadgetry—but the money wasn't his, it was federal money. Often that librarian got involved—that is, was quoted as "interested"—under the impression that he was being asked to help on some feasibility study, when in fact he was merely being asked to help some salesman meet his sales quota out of public money.

Spending public money wisely is, of course, a responsibility that librarians take seriously. A new factor is complicating the situation, however.

Once upon a time librarians could assume the following of anything being offered them: if it existed at all, it must have been wanted by someone. The new responsibility for libraries begins with the realization that this is no longer a safe assumption. It is true that any agency with access to public funds is going to be urged to buy more products than it can or should buy. And its only defense will be to spend every dollar—even federal grants—*as if* the money were its own.

This kind of library responsibility can have sobering consequences, and also certain reassuring consequences. Take, for example, a proposal to publish all the papers presented at a scholarly symposium—at a fairly high price in view of the fact that only a few major research centers would be likely to buy. Each such library might begrudge the money but not dare to risk criticism for failure to own such a work. (It may even have one of the contributors on its faculty.) If some librarians cannot afford this volume, they will probably torment themselves over how this will make their collection inferior to others. If, however, enough librarians opt not to

buy, they will suddenly all be off the hook, because the work won't be published—and one can't reasonably be criticized for not having a work that was never published, since no one else will have it either.

Some may worry over whether libraries have the *right* to prevent some kinds of publication in this way; others may be thankful that they have this power. Some of the same people who worry about whether selective buying might constitute censorship are at the same time counting on improved interlibrary loan techniques to help them make their book money go farther. But any means of letting libraries discontinue the buying of publications formerly bought will push some publications below the break-even point and represent censorship of a kind.

Insofar as libraries are going to have to exercise, for better or worse, their ever-growing power to decide which books get published, it will pay them to take a closer look at how the publishers have been making these decisions. One thing to notice immediately is how many books just never are published at all. Within a publisher's editorial department it sometimes seems as if it were necessary to wade through a hundred unpublishable manuscripts just to find one with promise. If and where libraries become more influential in determining what will be published (for them) and what won't—they probably won't fare any better.

There are always going to be marginal books—books that no one is going to read (or, at least, not with profit) even if published. Among the unpublished multitude there are doubtless some gems, but really very few. Like it or not, the libraries' new-found power to set limits on their purchases of marginal items is going to have to be exercised, if only because there wouldn't be enough money—even in the Pentagon—to do otherwise.

This being the case, what reasoning can be applied in distinguishing between the books to buy and the books to pass up (and condemn to nonexistence)?

Surely there belongs somewhere in the formula an allowance for reader opinion. Other things being equal, a book that will be opened frequently is surely more worth owning than one that will never be opened. Another yardstick that can be applied is whether the material is readily available in other places within the library. In the case cited of the conference symposium, it is more than likely that the opinions presented by participants will also have been presented in published papers—and be far more accessible in journals by reason of the better indexing that journals enjoy.

Two arguments in favor of identifying and avoiding marginal publications are, moreover, really clinchers.

One is that in any budget hearing no one wants to be forced into the position of defending his least defensible outlays. It won't sit well with any budget review officer to find that the library doesn't even seem to have a procedure for distinguishing between its most essential and its most marginal outlays. The other reason is that any analysis of the library's least appreciated outlays will necessarily provide invaluable information about its most appreciated outlays.

What once seemed a virtue—collecting instead of selecting as an acquisition policy for major research collections—has raised a question as to whether taxpayers are going to stand for open-ended acquisition policies, unjustified by proof of need or use. The hazard is not imaginary. What with well-intentioned raising of

sights in research acquisition, and unforeseen lowering of break-even points in research publications, things are being published, bought, cataloged or indexed, and housed that *nobody* would spend his *own* money on—or even open.

Books are being priced and published for break-evens on printings of 300 copies, 200 copies—and there is no limit to how low such break-evens can go as long as some critical number of research libraries will "collect" rather than select, and pay the price. The problem comes at an awkward time in terms of defending ever-rising library costs against irate taxpayers' groups who see themselves as the ultimate "fall guys" behind every *publicly funded* agency.

The case for a book may be a strong one but it will depend on first establishing the credibility of its advocates. This in turn means being ready with real answers if (for example) a budget-review task force were to demand answers with real documentation to the question "But where would you cut if you had to—and why?"

It is bound to be possible (any investigator will insist) to rate outlays in terms of their demonstrable contribution to the goal of satisfying readers. And in any such analysis it is mathematically inevitable that some figures will emerge such as these: the first 10% of outlays produces 20 or 30% of user satisfaction; whereas the last 10% adds less than 1% to library effectiveness.

Threatened by a budget cut, it is human nature to defend desperately the need for every dollar requested—but it's not necessarily very persuasive. The case for the best kind of outlay can be so much stronger as to leave no comparison.

Any hard-pressed investigator is going to know or suspect that the library is buying, cataloging, and housing works that nobody will ever open. What he is less likely to think about is that the library could well use more money, not less—but these added funds are needed to duplicate titles that are never on the shelf, or to work out ways to decrease "time in the bindery," or to accelerate reader access to new materials, or to facilitate browsing.

What would mightily impress any earnest budget investigator would be any actual cooperation from the librarian in terms of identifying marginal operations—operations such as the federally funded kind of boondoggle on which the library would never spend its own money, but which still encroaches on space and staff without adding demonstrably to reader satisfaction.

In terms of public relations, the best possible stance that a librarian can adopt in dealing with budget-cutters is one of sympathy and cooperation. They want relief somehow from spiraling costs; so does the librarian. They don't want services cut if it can be helped; neither does he. They will bring no sympathy whatever to hearings at which public servants propose relief for themselves at the expense of the taxpayer. Neither would the librarian as regards any agency other than his own.

Happily for librarians they may just have one of the most salable products, that is, one of the most defensible services that a review board will be likely to encounter. To a unique extent a library will have effectively been all things to all people. A mere listing of reference questions brought to the reference desk can be mightily impressive, especially to those who had been overlooking this resource. Professionals from other disciplines can become wide-eyed with awe over the sophistication implicit in the library world's indexing and search services.

Be it noted that what impresses people about libraries is their performance, not their technology. People take print for granted, and take the claims being made for the newer technologies with a grain of salt. Here again, a librarian defending his profession (and his budget) would do well to make sure he doesn't find himself defending services that he has some doubts about himself—instead of his primary asset: print.

Print is not only the most revolutionary medium of communication ever devised—its greatest triumphs are yet to come.

The superiority of print as a means of communication between mind and mind beggars description.

To borrow from the lingo of the later media, print is on-line, high density, random access, fast forward and reverse, and supremely portable.

Print has an hourly operating cost too low to measure, requires no energy consumption or special machinery, can't be accidentally erased or wound backward, and is so simple that a child can operate it.

Print can handle data in either the digital or analog mode (i.e., either as words or pictures), in either color or black-and-white. When it comes to legibility, print is the standard by which all other media are judged. When it comes to working life, books as old as 500 years are still fully serviceable.

Most spectacular of all, however, is the way print is inherently "on-line" with the way the mind works. Even slow readers can read silently at least three times as fast as they can read aloud—or be read to. But more than this, the reader can skip. This bears repeating because none of the advantages of print are as spectacular as this one: *the reader can skip.*

Contemporary critics of our "pour it in" classroom procedures are suggesting that the core of effective education is not the storage of data at all, but the stimulation of interest. In a lecture situation, however, there is just no way of interesting each auditor equally and simultaneously, and the usual condition of the listener is utter boredom between the "interesting" parts. As a *reader*, however, he need never be bored because he can skip or change books. He can choose his book, and choose his chapter, and choose his pace. He can move rapidly through the topic sentences or chapter summations. He can review the incidence of his topic of interest in the table of contents or index. He can switch to other publications entirely, either as cited by the author or as spotted on shelves or in catalogs. He can refer back as well as skip ahead. And he can race ahead as he could not safely do in a classroom situation without duplicating what he must then sit through anyhow.

In the gallery of great inventions, print is sometimes thought of as second only to speech, but as regards self-instruction, print is surely superior to speech. No one, certainly, would choose to read a book aloud if there were no impediment to reading it silently.

With all these advantages, then, is the book about to be rendered obsolete by more recent communication media? That was being predicted not long ago. Somehow it hasn't happened. Somehow the media that were to have displaced the book lost their appeal when their grants ran out. Somehow books have thrived.

Only a century ago books were still rich men's privileges. Even after the flower-

ing of the public library. books were still something poor men stood in line for. And until living memory few men had the price of much food for the mind after buying enough food for the body.

Today, however, books are well within everyman's reach, and are to be obtained not only in bookstores and libraries, but in newsstands, supermarkets, department stores—and, of course, by mail.

Some men may opt to spend their disposable income on color TVs rather than books, especially those who (in school) never saw a book that wasn't boring. But books today are affordable and accessible beyond Andrew Carnegie's wildest dreams, as is substantiated by publishers' sales. In fact, if the pass-along circulation of these privately owned editions could be estimated it would probably be astronomical.

Where does this leave the library?

Take, for example, the following fictional case. An affluent-looking patron enters the library in search of help with a problem. The library successfully identifies a relevant book—but can't supply it, either because it isn't owned or is in circulation. However, the patron is briefed on his alternatives, that is, whether to have the library seek to get the book on interlibrary loan, or perhaps to wait his turn to borrow the copy in circulation.

Will the library also brief him on where to buy a copy in case he should so desire? Traditionally many libraries have hesitated to do so—at least unless pressed. They reason that if the patron had wanted to buy a copy he would have gone to a bookstore. They fear possible criticism if they should depart from their assigned role (lending books without charge).

It could be, however, that today's patron is not really asking "Could you help me find some answers here *without any outlay of money*?" He may not have come to the library because he feared the bookstore's help would cost him money. He may quite simply have come to the library because he viewed it as a place not just set up to lend books but also to deal with reference questions. Already in many libraries, patrons are readily agreeing to pay extra for extra service, service such as special phone calls, special photocopies, etc.

Suppose the above mentioned patron is mainly interested in having his question answered *quickly* and is by no means concerned about having it answered free of cost. Is there any reason why the library shouldn't help him *buy* a copy? That is an assignment at which the library personnel would surely be skilled, and one that might easily be carried out to everyone's satisfaction more cheaply than getting a copy on interlibrary loan.

Insofar as libraries have been unconsciously assuming that it would be immoral for them to charge for any service, doesn't this assumption warrant review? Who says a patron wouldn't spend money for extra service?—considering what he can and will spend for cocktails and white sidewall tires—considering what he'll spend for courses given by public institutions—considering how many schools even charge children for textbooks.

Aren't taxpayers really in revolt against *involuntary* expenditure, not just expenditure? Doesn't inefficiency really start where expenditures become involuntary

rather than self-authorized, that is, where someone starts spending money more freely than if it were his own money? Isn't there deep down a need for a move toward spending money *as if it were your own* (because it is your own)?

Lest this line of thinking seem tangential to the assigned topic, namely, "publishers and the library," let it be noted that there is an interesting interface here between private enterprise and nonprofit or governmental service. Both have made their contributions to the democratization of the book—to the change from books as rich men's privileges to everyman's resources. (Adaptation to changing trends is perhaps easier within the competitive world of publishing where there is no "tenure.") But change is never-ending, and the game of projecting trend-lines into the future can be fascinating.

One pessimistic forecast might be that, as the Pentagon swallows more and more public money, schools and libraries will get less and less; as inflation destroys more and more purchasing power, people will have to cut back on "nonessentials" like reading. A rather more optimistic forecast would be, however, that reading will continue to be one of the most depression-proof activities ever devised, able to thrive in either prosperity or adversity.

There may be a certain public disillusionment a-building as regards the value of formal degrees. If so, it is against instruction, not against learning. And one could lather a community with the materials of self-instruction for a fraction of what is sometimes spent on instruction by lecture.

The potentials of print are, again, a very real potential answer for all concerned. Just about every one of the so-called newer media has been a disappointment—not only in terms of cost-effectiveness but even if we ignore cost. With the possible exceptions of the Link Trainer and language lab (where the issue is coordination of mind *and muscle*), the book seems to be able to beat the best of them at their own game, *especially* where costs are considered.

One defense of "pour it in" classroom procedures stresses the necessity of allowing for the nonreaders. Teachers can wax bitter over the way they are criticized for the boredom of their best students—but at the same time are given no appreciation for getting through to at least some of their slower students. Only some of the students would read on their own, the teachers say; with others the discipline of the classroom is the only way.

There is a gulf of misunderstanding, though, between those who equate books and boredom and those for whom reading can open new horizons. And those who find books boring (never having seen any that weren't) are called "nonreaders." One might recall, however, how the "nonreaders" in a reform school near Detroit suddenly became avid readers when they discovered a pile of paperbacks that weren't boring. (They stole them, hid them behind steam pipes and under mattresses, and for exchanges there were 1-cigarette books, 2-cigarette books, etc.).

The difference—between books that bore and books that beckon—is often as simple as the difference between books assigned and books freely chosen.

It seems worth asking: exactly why must assigned books so often tend to bore? It isn't only that programmed learning (including simple lectures tied to curricula)

inevitably drags almost every learner through much he finds self-evident, and some he'd rather sleep through. It isn't only that committees rarely write with any flair. It is also that few schools dare *assign* any reading that hasn't been precensored to forestall complaints from local zealots, fanatics, and bigots. Assigned books have, on the whole, been emasculated.

Schools are more to be pitied than blamed for this. But on the other hand they may just find an answer in *free* reading as opposed to assigned reading. Pressure groups can generate real indignation over the charge that books they disapprove of are nevertheless *required* reading. Their case becomes far weaker, however, where nothing is forced, nothing is assigned, and the choice is the reader's. (And public libraries can hardly be expected to censor adult collections on the chance that a child might peruse them.)

In any case, any idea that a child can nowadays be kept from contact with controversial ideas by emasculation of textbooks is surely unrealistic. (Should libraries perhaps make use of television's defensive ploy and post a few signs reading "Parental guidance advised"?)

In tomorrow's world libraries are going to be called upon to play a far more influential role in the publishing process, not only in the service of new media of communication but also as the inner sanctum of that far, far older medium of communication that is print.

Is print on the way out? No—absolutely not. The schools might be in for trouble—but the public is beginning to make a sharp distinction between the "tell 'em what they *ought* to know" services of the schools and the "tell 'em what they *want* to know" services of libraries and books and print.

As prophets within the classroom culture have been warning for some time, all trends indicate that the schools are simply not going to be able to compete with the newer media like television when it comes to education by lecture. Any teacher who can effectively minimize the boredom with which 30 highly individual students are bound to view any standardized effort to "pour it in"— that teacher would best be put on TV where he or she could reach a maximized audience with the "minimization of boredom," and have vastly increased backup besides.

Thoughtful educators are proposing that schools face up to this rather than just go on the defensive. Schools should take advantage of the one big asset that TV can hardly top them on, namely, the face-to-face feedback that permits real participation by the child, and that kindles interest by letting the child follow his nose instead of some committee's curriculum.

So far, so good. But what would happen if any insightful teacher could inspire each student to break free of the lock-step of the lecture and enter into an excited pursuit of his interests? It could only lead to an expansion in the use of print, almost beyond calculation, both in school libraries and in public libraries.

There are also some who concede the importance of freeing students from the lock-step boredom of programmed learning—the importance of "feedback" as they may call it—but they still somehow choose to ignore the fact that books (freely chosen) provide exactly this breakthrough. Their image of feedback is a student tap-

ping on a keyboard in front of a TV tube. If they recognize at all that just flipping pages can be faster and easier—well, over recent years, it was gadgetry that carried the bigger grants.

One can't blame educators for being worried about finding themselves displaced by TV—perhaps even by combinations of TV and (direct by mail) *books*. Some would argue, however, that those who rush to embrace every new gadget that comes along are taking a strange way of defending themselves from the competition of the gadget. In general those with gadgets to sell will argue that extra outlays on gadgetry can be saved by reductions in payroll—which is exactly what is worrying those whose salaries might be the ones in mind.

One illusion seems to have been befogging the issues: that spoken communication is simpler and more fundamental than printed communication. Speech does have undeniable advantages when it comes to *discussion*, that is, where reading must be preceded by writing. Reading has all the advantages, however, in situations where a single writing or printing can serve several readings. In any realistic comparison between reading silently and reading aloud (or listening), all the advantages lie with reading silently.

DANIEL MELCHER

PUBLISHING AND BIBLIOPHILE SOCIETIES

The burgeoning of scholarship which was so notable a feature of the 19th century outstripped developments in publishing for a considerable period. There was at that time a (relatively) larger number of commercial publishers willing to publish worthy material at a small loss than there would be a century later, and with the costs of printing very much lower, the losses could be small. However, until the expansion of university presses in the 20th century—and the subsidization of certain types of expensive and unprofitable work by such bodies as the Mellon Foundation, plus the more recent growth of the specialist offset litho reprinting firms—there remained a considerable gap between what would be published through conventional channels and what was required by scholars working in certain subject fields, particularly in the humanities. This gap was to be filled by the creation of the publishing society.

Publishing Societies

It is possible to trace the development of these groups back to the ancestors of the modern academies or learned societies, to such informal groups as the Elizabethan Assembly of Antiquaries or to the formalized structures of the Royal Society and the Society of Antiquaries. Publishing societies have a good deal in common

with the "normal" learned societies, but differ from them in some important respects. The primary purpose of the learned society is the advancement of knowledge in its particular field—a purpose it fulfills by acting as a pressure group; by organizing congresses, conferences, and exhibitions; by regular meetings at which members read papers and at which there is an interchange of information by those attending. The society may well publish a number of books (including, perhaps, reprints of important early work in its field of endeavor) and issue a regular newsletter, journal, proceedings, or transactions, but such publishing is but a part of its program of work. It may be an insignificant part of its program, since some learned societies flourish and yet have a negligible publishing output.

The "pure" publishing society on the other hand will have no premises and no meetings (except the infrequent and formal meetings of its executive committee). It exists to advance learning solely by publishing important works (often reprints of scarce early works, or inedited manuscript texts) and its members' subscriptions are devoted entirely to meeting the production costs of its publications. To be sure, "invisible colleges" will grow up around such societies; these may be very useful groups but their existence or absence has nothing to do with the essential part of the society's work.

The earliest publishing societies of this kind were Scottish—if one discounts the Roxburghe Club as being a bibliophile group (on which, see below) rather than a publishing society. The first of these undertakings was the Bannantyne Club, founded by Sir Walter Scott in 1823. Inspired in part by the publishing endeavors of the Roxburghe Club, the Bannantyne Club was set up in order to print books illustrating the history, antiquities, and literature of Scotland. Initially with 31 members (a number later increased to 100), in its 38 years of life the club issued some 130 volumes of reprints of early works significant in its sphere of activity. Carrying on an agreeable practice of the Roxburghe Club, some of these volumes were printed at the expense of individual members for presentation to their fellows, but many were produced with the funds accruing from the members' subscriptions, the more usual mode. Unlike publications of the Roxburghe and many of the later clubs, the number of copies printed was not necessarily limited to that of the membership; nonmembers were also able to purchase copies of some of the more important texts.

The success of the Bannantyne Club inspired several similar enterprises in Scotland: the Maitland Club (1828–1859), which concerned itself mainly with southwest Scotland; the Abbotsford Club (1833–1866); the Spalding Club (1839–1871) and New Spalding Club (1886–1915), which specialized in materials dealing with Aberdeen and the northeast, were the more important of these. Their example paved the way for similar local historical and topographical publishing societies in England. The Surtees Society, concerned with Northumbria; the Chetham Society for Lancashire and Cheshire; and the Dugdale Society for Warwickshire and the West Midlands are important instances of such endeavor.

Printing clubs specializing not in a locality, but in a particular variety of material, are also important. The Harleian Society (founded 1869) with its printings of heraldic visitations and "any manuscripts relating to genealogy, family history

and heraldry" has contributed powerfully to the needs of those requiring fuller information than they can obtain from *DNB (Dictionary of National Biography)*. The British Records Society (1888–) with its calendars of wills, marriage licenses, etc., has been no less useful in this respect.

Other publishing societies deal with particular racial or cultural groups. The Huguenot Society in London (1885–) and the American-Jewish Society in New York (1892–) are representative of the organizations which have published very valuable biographical and other record material in their given fields.

Transcending such specialized groups are those societies such as the Camden Society (1837–1897; now amalgamated with the Royal Historical Society), which during its separate life printed over 160 works of historical interest, ranging from old political treatises, memoirs, inventories, and chronicles to such literary texts as the *Ancren Riwle*. The Hakluyt Society, founded in London in 1846 and still very active today, took as its object the printing of "rare and valuable Voyages, Travels, Naval Expeditions and other geographical records" and in its century and a quarter of work has issued well over 200 volumes of material of great importance.

In more specialized fields also, publishing societies have played an important part in providing modern printings of scarce or inedited texts. The Parker Society, the Selden Society, the Sydenham Society, and the Newcomen Society—concerned respectively with the history of the English church, of law, of medicine, and of technology—are significant exemplars.

The pattern for these essentially historical societies is roughly paralleled by the printing groups formed in the sphere of literature. These included societies concerned with a single author, such as the Shakespeare Society (1840–1853), the New Shakspere Society (1873–1892), the Browning Society (1881–1896), and the Shelley Society (1886–1892). These four groups will serve also as examples of the problems which can beset the publishing society: The Shakespeare Society was dissolved because its work was tainted by the forgeries and falsifications produced by its director, John Payne Collier; the New Shakspere Society became embroiled in the academic wrangles and pamphlet wars of F. J. Furnivall, its guiding spirit. The Browning Society (founded while the poet was still alive) became the home of cranks and quaints rather than of genuine scholars; while in the case of the Shelley Society, the notorious T. J. Wise was able to use his position in it to further his printing of spurious editions.

Some of the single-author societies—the Chaucer Society, the Wordsworth Society—were more consistently useful and productive. In general, however, those literary printing groups which concerned themselves with larger themes have been more successful. Such bodies as the Malone Society, working in the field of the early English Drama, and the Augustan Reprint Society are instances of printing clubs whose contribution to English Studies has been considerable. The most important of such societies, however, are the Early English Text Society (founded by F. J. Furnivall in 1868, and still very active) and the Scottish Text Society (1882–), which between them have republished much of the significant material in the older English and Scottish tongues, and are worthy successors to the first Scottish printing clubs.

Bibliophile Societies

In addition to these purely publishing clubs, which are mainly of interest to the librarians of research libraries concerned with the subject field in which they operate, there is the bibliophile group.

Traditionally librarians have shown particular concern with, even love of, books as material objects as well as with the texts they embody. This scholarly affection for the tools of his trade is not, of course, limited to the librarian: many professions share with the research librarian an extramural interest in historical and other aspects of that profession. But in most instances it is an interest by the professional alone, whereas the special interest in books and in collections of books is shared by many others—from the inheritor of a princely private library through to the impecunious collector of modern authors. It is, of course, from those nonprofessionals sharing this more general interest in the book that the "Friends of the Library" groups draw their membership.

Nearly all bibliophile groups are to some extent *clubs* in which the social element is important. Whether it be at the breakfasts of the Philobiblon Society, the luncheons of the Typophiles, the afternoon-tea-and-cucumber-sandwiches of the Bibliographical Society, or the grand formal dinners of the Roxburghe Club, the ritual breaking of bread with fellow devotees is justification enough. By providing an opportunity for the informal exchange of information and speculation, these meetings give to bibliophiles many of the benefits gained through the unstructured sessions which form so useful a part of professional conferences. In some cases—among the more august and patrician of these bibliophile groups—election to the deliberately restricted club carries social prestige. But most of these societies, whether this factor operates or not, will have a program to support their social function. Lectures by guest speakers; the production of keepsakes by and for the members; the organization of exhibitions, either in their own premises by those groups substantial enough to have them (such as the Grolier Club and the Book Club of California) or in galleries or libraries associated with the group, are typical of the activities in which such societies engage.

Beyond this, and making these groups very much closer to the publishing societies described above, there will often be a program of serious publishing. Some bibliophile groups whose interests are largely aesthetic concentrate on the publication for their own members of finely printed editions concerned with their own locality, like the long series of California material produced by the Book Club of California, or the attempts by the Alcuin Club in British Columbia to foster the production of Western Canadiana. Some, like the Caxton Club of Chicago, apply concepts of fine book production to works of more general bibliophilic interest. Early publications of the Roxburghe Club in England, with its long series of works edited from manuscripts in the possession of members, showed a similarity to the publishing societies which were its contemporaries in the 19th century, though in recent times the books prepared for members have been closer to those of the bibliographical societies in style and approach.

Some of the bibliophile societies show in their work a number of different in-

fluences at work. The Private Libraries Association, for example, in its quarterly *The Private Library* includes many articles of a more enthusiastic than scholarly nature; but in its annual books for members it has issued well-edited reprints of scarce works such as Frederick W. Faxon's *Literary Annuals and Gift Books, a Bibliography* (1912, reprinted 1973) and Holtzapffel's *Printing Apparatus for the Use of Amateurs* (1846, reprinted 1971). The association has also issued new books of scholarly significance, such as Lesley Shepard's *John Pitts: Ballad Printer 1765–1844* (1969) and Brian North Lee's *Early Printed Book Labels . . . to 1760* (1976). The Printing Historical Society's *Journal* is one of the most important serials printing new articles on the history of the book. The membership of this society has also enabled the publication of reprints of several books of great scholarly value, such as Vincent Figgins's *Type Specimens 1801 and 1815*, edited by Berthold Wolpe (1967), as well as the publication of totally new reference books such as William Todd's *Directory of London Printers 1800–1840* (1972).

The "true" bibliographical societies, to which the Printing Historical Society is closely related—those of America, London, Oxford, and the University of Virginia in particular—have provided scholarship with many reference books of the first importance. The Bibliographical Society's *Short Title Catalogue of English Books to 1640* (1926; rev. ed. of Vol. 2, 1976; rev. ed. of Vol. 1 in preparation) is the outstanding example of such work. Although the compilation and publication of such reference books may theoretically be regarded as one of the functions of a national library system allied to a government printing office, in practice the production of such a volume nearly always devolves upon those who do the work for love and support its publication with their own money.

Significance and Problems of the Societies Today

Traditionally the editions of the publications of publishing and bibliophile societies were limited and were available only to members. Such exclusivity had obvious and distinct advantages to those attempting to drum up support for a new society they were setting up, since the members had almost a guarantee that the value of the publications they would receive would appreciate on the antiquarian market. But the limitation also operated to the disadvantage of scholarship in general, preventing many scholars and librarians from acquiring or using material of importance to them: the neglect of the Philobiblon Society (for a time in the mid-19th century a close rival to the Roxburghe Club) is due in large measure to the fact that its *Miscellanies* have remained very little known to outsiders and are difficult to procure.

In recognition of this drawback many of the surviving publishing societies have opened their ranks to institutional membership (now the backbone of such as the Early English Text Society), while another relaxation of their exclusivity has frequently been to make copies of some of their books available to nonmembers, albeit at a higher price than the cost to members of the society. In addition, the scarcity of the 19th-century editions of some of these societies' books has been re-

lieved by the production of offset litho reprints. Frequently, when the society is still active, this has been a joint enterprise of the society with a reprinting corporation, and the royalties accruing to the society have been ploughed back to underwrite the costs of future publications. In some instances, however, some of the less ethical reprinters have reissued the old (and out-of-copyright) texts against the wishes of the publishing society concerned, and have thus hampered its program of updating these works in modern, reedited versions.

The changing climate of scholarship and of the publishing trade has undoubtedly made the activities of publishing societies of less importance than was the case a century ago. The greatly increased costs of conventional printing, plus the increasing professionalization and specialization in many fields of learning militate against the continuation of societies with a general program of publication. Nevertheless, the ease and relative cheapness of offset litho reprinting today open the way for specialized reprinting groups, which, working for an assured market, can produce reprints at a very substantial saving compared with the charges levied by the commercial reprinting firm.

BIBLIOGRAPHY

Barker, Nicholas, *The Publications of the Roxburghe Club 1814–1962*, Roxburghe Club, London, 1964.

The Bibliographical Society 1892–1942: Studies in Retrospect, Bibliographical Society, London, 1945.

Bigham, Clive, *The Roxburghe Club: Its History and Its Members 1812–1927*, Bibliographical Society, London, 1928.

Brown, Arthur, "The Growth of Literary Societies," in *Librarianship and Literature: Essays in Honour of Jack Pafford* (A. T. Milne, ed.), Athlone Press, London, 1970, pp. 83–96.

Cave, Roderick, "Monckton Milnes and the Philobiblon Society," *Private Library*, ser. 2, **2**, 68–85 (Summer 1969).

Delepierre, Octave, *Analyse de travaux de la Societé des Philobiblon de Londres*, Trübner, London, 1867.

Hume, Abraham, *The Learned Societies and Printing Clubs of the United Kingdom*, London, 1853.

Laing, David, *The Abbotsford Club: A List of Members, the Rules and a Catalogue of Books*, Edinburgh, 1866.

Laing, David, *The Bannantyne Club: Lists of Members, Rules and Catalogue*, Edinburgh, 1867.

Nichols, J. G., *A Descriptive Catalogue of the Works of the Camden Society*, Nichols, London, 1862.

Schubert, Leland, *A Bibliography of the Publications of the Rowfant Club*, Rowfant Club, Cleveland, Ohio, 1962.

Spiller, Robert E., *The Philobiblon Club of Philadelphia: The First Eighty Years*, Philobiblon Club, Philadelphia, Pa., 1973.

Steeves, H. R., *Learned Societies and English Literary Scholarship*, Columbia Univ. Press, New York, 1913.

Whitehill, Walter Muir, *The Club of Odd Volumes, Boston, 1887–1973,* Philobiblon Club, Philadelphia, Pa., 1973.

Williams, Harold, *Book Clubs & Printing Societies of Great Britain and Ireland,* First Edition Club, London, 1929.

RODERICK CAVE

PUBLISHING DIVISION, SPECIAL LIBRARIES ASSOCIATION

The Publishing Division is one of 29 subject interest divisions of the Special Libraries Association (SLA). Membership in the division is open to any member of the Special Libraries Association who wishes to affiliate with the Publishing Division. A majority of members are librarians in publishing company libraries. An important minority of members, however, are persons who work in other areas of communications and information industries or who, as consumers of published materials, are interested in the division's concerns. Unlike many other SLA divisions whose subject interest areas are clearly and closely defined, the Publishing Division has no such subject matter definition. Members of the division are chiefly interested in the publishing process and in the management of information materials from the point of their inception as an idea, through the publishing and marketing processes (including bibliographic matters such as CIP, ISSN, ISBN, MARC, etc.), to their arrival and successful use in libraries.

The objectives of the division reflect those of the parent association: to encourage and promote the utilization of knowledge through the collection, organization, and dissemination of information; to develop the usefulness and efficiency of special libraries and information centers; to stimulate research in the field of information services; to promote high professional standards; to facilitate communications among its members; and to cooperate with other organizations that have similar or allied interests in all fields of publishing, with special emphasis on periodical and book publishing.

The Publishing Division is represented by the chairman and the chairman-elect of the division at meetings of the Division Cabinet, a body composed of officers of all SLA divisions, which meets during the Winter Meeting and the Annual Conference of the association in order to advise the Board of Directors of the association on matters concerning division interests and to be advised on association policies and procedures. A division cabinet officer, who is also a member of the Board of Directors of SLA, conducts these meetings. The division cabinet officer assists divisions in interpreting association policy as it affects divisions (annual reports, treasurer's reports and audits, preparation and distribution of bulletins, program development for Annual Conferences, etc.). Through the Division Cabinet,

divisions may request the Board of Directors to consider recommendations for association-wide action programs or for revision of current association policies.

The Publishing Division presents a full program of activities during the association's Annual Conference. Usually there are two or more panel discussions at which people knowledgeable in a particular aspect of publishing activities are asked to participate. Topics for these panels range widely and have in recent years dealt with standard order forms, copyright, Z39 Standards, the creation of a published product, problems of distribution, problems in Canadian publishing, and various programs involving librarians, jobbers, and publishers. A Book and Author Luncheon is usually included on the program, at which a prominent author is invited to speak. Topics sometimes have no relation to publishing, although authors most often share their experiences of "being published" with the audience. An important part of conference programs is the nightly open house during which division members and guests meet informally in a Division Suite for conversation and other social activities. Each year's program includes a field trip to publishing houses and libraries in the area of the conference site.

The Publishing Division publishes three *Bulletins* a year. The content usually deals with conference programs, both accounts of and plans for these meetings; news of members within the profession; announcements from the SLA office; reports from the division chairman and various committees; and a continuing feature—"Profiles of Publishing Libraries." The "Profiles" series, begun in 1968, offers descriptions of members' libraries (usually written by the librarian), accounts of the work done in the libraries, and the place and function of each library within its parent organization. A cumulation of these articles was published and sold as a separate volume in 1974.

The Publishing Division cooperates with other organizations whose interests are similar. Division programs are sometimes cosponsored by the SLA Publisher Relations Committee or by the Association of American Publishers (AAP). Other projects are undertaken cooperatively, such as a survey sponsored jointly by the Publishing Division and the Association of American Publishers, which resulted in the 1976 publication of *Education for Publishing*, an 86-page report. Another joint project is the "Books for Prisoners" program in which the Publishing Division is cooperating with AAP.

The Publishing Division was formed in 1948. A New York Publishing Group has met regularly since that date. In 1960, Publishing Division member Rose Boots received the SLA Professional Award, and in 1962 members Fannie Simon and Rose Boots were named to the SLA Hall of Fame.

DAVID E. KING

PUERTO RICO, LIBRARIES IN

Early History

As part of the Caribbean backwater within the Spanish colonial empire, Puerto Rico experienced little development of libraries, book and periodical trade, or general education prior to the 19th century. Such limited efforts as did emerge were confined to church-related institutions and book procurement by wealthy peninsular Spaniards. And more often than not, as island historian Arturo Morales Carrion (1913–) wryly observes, the combined ravages of fire, flood, and book-hungry tropical bugs and molds made quick work of those private libraries that did come into being.

Among the earliest recorded book-importing projects was that of the Spanish colony's Catholic bishop, Alonso Manso (1458–1539), who brought a modest private library with him to his primitive quarters in the settlement of Caparra where he arrived on Christmas Day of 1512. Six months later Caparra was burned to the ground by attacking Carib Indians, one of the ethnic groups still engaged in resisting the Spanish conquest of the Caribbean. Don Alonso's modest library went up in smoke along with the settlement's thatched huts, as the unlettered native inhabitants of *Boriquén* wreaked symbolic vengeance upon would-be "civilizing" missionaries.

More permanent Spanish settlements sprang up in the succeeding three centuries, bringing with them the printed materials essential to the moral and religious education of peninsular settlers and that of a handful of the descendants of the subjugated natives and the African slaves brought in to replace them. The men of the cloth, along with an occasional lay gentleman, continued to bring with them the output of Europe's burgeoning printing presses. And their collecting continued to meet with tragic setbacks, the best known of which is the Dutch sacking of San Juan harbor, which resulted in destruction by fire of the two major libraries known to exist there in 1625: that of the Dominican monastery and the notable private collection of Bishop Bernardo de Balbuena (1561–1627).

It is not until the fourth decade of the 19th century that records of organized book dealing and the opening of semipublic libraries appear. Spain, ousted by Creole rebels from most of her continental empire, simultaneously began to devote more attention to her long-neglected Antillean outposts.

A royal decree of June 19, 1831, established a government library of books on legal topics. Staffed by a paid librarian, this collection flourished and eventually was merged with the library of the island's Bar Association in 1899. The 1830s also saw the opening of a library within the new San Juan Conciliar Seminary, which survived nearly seven decades. Customs records for this decade show the first evidence of organized importing of Spanish-, French-, and English-language books by San Juan merchants for sale to the general public.

San Juan ran behind its neighboring Antillean capitals in the complementary fields of printing and publishing. It was only in 1806 that the first printing press arrived at the harbor. That year, the first issue of *La gaceta,* a twice-weekly organ founded

by Governor Toribio Montes (1804–1809), made its appearance and marked the start of Puerto Rican periodical publishing. Also in 1806, exiled Spanish poet Juan Rodríguez Calderón (1778–1839) published two books of his own poetry on the island, using the press that he had imported from the United States. After this modest beginning by the first Puerto Rican printer, island newspaper publishing developed steadily through the remainder of the century and continued uninterruptedly following the change of sovereignty after the United States vanquished Spain in 1898. Hundreds of separate newspaper and magazine titles had been recorded through the mid-1970s, some of them running through only a few issues. Book publishing developed more slowly, with most works by Puerto Rican authors printed overseas—a tendency that has continued throughout the 20th century.

Foreign books found an increasingly easy entry to the island from the outset of the 19th century. The first full-fledged bookstore has been traced to the year 1837, and wholesale imports of book for resale date back at least some 30 years earlier.

Much of the 19th-century effort at creation of libraries was the product of liberal political inclinations. Partly under the influence of radical French refugees who settled in Puerto Rico early in the century, unorthodox thinkers began building private collections of works of the European Enlightenment—much to the consternation of the Spanish colonial authorities. The island's Society of the Friends of the Country started a public library in 1843, based on a book collection donated by Galician priest Rufo Manuel Fernández (1790–1855). This library, oriented toward natural sciences and the diffusion of useful practical knowledge, reportedly grew to some 13,000 volumes by the year 1885.

A more openly political and anticolonial library movement was launched at midcentury by Alejandro Tapia y Rivera (1826–1882), a noted liberal thinker. Despite repression by the colonial authorities, Tapia's efforts finally bore fruit in the creation of the Ateneo Puertorriqueño in 1876. This cultural institution temporarily took over the library of the Society of the Friends of the Country, and—through the efforts of Ateneo founder Manuel Elzaburu y Vizcarrondo (1851–1892) and Spanish-born writer Manuel Fernández Juncos (1846–1928)—converted it into a public library with books on general subjects.

Other public libraries blossomed in the last three decades of the island's final century under Spanish rule. These included a second one opened in San Juan in 1880 in the City Hall basement, with an initial 400 volumes; a 5,000-volume library organized by the west-coast municipality of Mayagüez in 1872; and a tiny collection set up by the city of Ponce on the central-south coast, which flourished from its founding in 1894 through 1898. Smaller towns followed the pattern set by the main cities and founded municipal reading rooms open to the general public. It is worth noting that at no point under Spanish rule did any entity, public or private, set out to form a general or central public library capable of serving the whole colony; this task would only be formulated late in the following century.

The merits of the U.S. military occupation of Puerto Rico in 1898 and that country's acquisition of sovereignty over the island are still the focus of hot political debate among Puerto Ricans. It is safe to note, however, that the shift in sovereignty brought in a colonial administration much more inclined to promote public li-

braries—and public education generally—than was the Spanish regime which preceded it.

Five years after the change of sovereignty, the Insular Library [Biblioteca Insular] of Puerto Rico was founded in San Juan with Fernández Juncos in charge. From 1903 through 1916 this institution occupied provisional quarters in the Diputación Provincial building on Cristo Street in Old San Juan. The U.S. territorial government, along with a handful of dedicated private citizens, took an active interest in developing the Biblioteca Insular into a true public library. Insular Governor Arthur Yager (1913–1921), a personal friend of philanthropist Andrew Carnegie, secured from the latter in 1914 a grant for $100,000 to erect a modern library building in the capital city. The facility was occupied by the Insular Library in 1916, and the following year the institution was officially renamed the Carnegie Library.

In 1917 the island's Education Department assumed full financial responsibility for operation of the capital's public library, subject to counsel from a board of trustees. This operational structure would stay in effect until 1950, when the territorial government was reorganized in anticipation of the creation of the partially self-governing Commonwealth of Puerto Rico. From that year, when the board was abolished, the Carnegie Library and all other public libraries supported by the central government have been under the direct control of the Education Department.

A handful of other municipal free libraries were opened in the five decades after 1898. The main foci, though, of private library promotion prior to the Commonwealth were efforts (largely unsuccessful in this period) to maintain the Ateneo collection. This would only be achieved during a revival of nationalist intellectual concern in the 1960s.

Apart from establishment of the Carnegie building and collection in San Juan, the most consequential development of the early 20th century was the founding of the University of Puerto Rico (UPR) and gradual building of both university and academic library into broad institutions fully reflective of the concerns of modern intellectual inquiry. Like the Carnegie Library, the UPR got off the ground in the year 1903, which may perhaps be taken as the start of institutionalization of U.S. territorial administration of the island. Growing slowly from an adjunct of the Normal School, which later became the university, the library reached holdings of 7,000 volumes by 1912. After 1937 it occupied its own building and took on more and more of the organization and staffing of a U.S. academic library. Its early librarians, in fact, were for the most part U.S. mainlanders by birth; the list begins with D. N. Hardy (1904–1909), Jaime Bagué (1909–1910), Helen Sweet (1911–1913), Emma M. Murray (1914–1915), and M. S. Negrón (1915–1917). It was not until 1960 that a Puerto Rican became director of the library: José M. Lázaro (1960–1962). Continuing this changed pattern were Rodolfo Rivera (1962–1964), Josefina del Toro (1964–1969), Gustavo Agrait (1969–1970), and Rafael R. Delgado (1970–).

In 1923, the institution that would one day form the hub of the island's second academic library network was opened in San Germán, a pleasant, small mountain town in far-western Puerto Rico. This was the setting for Inter American Univer-

sity, a Protestant institution then known as the Polytechnic Institute. Even more than the public university, Inter American was colored in its early development by a North American staff and faculty and an almost exclusive use of reading materials in the English language.

Present Library Situation

Puerto Rico's modern library history is largely conterminous with that of the Commonwealth, proclaimed in 1952 with a constitution that formalized increasing local self-government and made Spanish the official language of administration and instruction.

STRUCTURE

Under the Commonwealth, the Public Education Department, within its ambitious community education program, created in 1956 a Public Libraries Division as a complement to the School Libraries Division already in existence. Under the leadership of the Public Libraries Division's first chief, Gonzalo Velázquez (1905–), the government set out to provide at least one public library building for each of Puerto Rico's 78 municipalities. As of fiscal year 1975–1976, at least 46 of these towns had a free public library, and there were 52 such libraries altogether. The largest facility, the Carnegie, was closed for repairs from 1965 to 1969 and reopened with a collection of approximately 35,000 volumes. None of the public libraries has a professional librarian directly in charge. All are overseen by six professionals with the title of regional supervisor. These librarians coordinate service efforts of all the public libraries in their respective regions, as well as those of bookmobiles and rural traveling libraries (small "book boxes" delivered to homes or businesses in remote rural communities).

Besides the libraries operated directly by the Public Education Department, there are a number of government-run libraries available for public use. The largest number are municipal libraries run directly by the municipality and usually located in the City Hall or in public office space nearby; these are operated by locally appointed clerical personnel and tend to function as reading rooms with minimal book collections. Available to the serious researcher are a number of government libraries concentrated in the San Juan Metropolitan Area. Among the most important are the following libraries.

Biblioteca General de Puerto Rico

The Biblioteca General is an embryonic national library developed in the early 1970s, with 1975 book holdings of about 60,000. Headquartered within the General Archives building and operated by the Institute of Puerto Rican Culture, this facility is open only during business hours and is mainly oriented toward book collection and preservation. Since the island lacks a deposit law, the efforts of the

Biblioteca General and other libraries seeking to record Puerto Rico's printed output have been severely hampered.

Legislative Reference Library

With 50,000 volumes of books and periodicals that reportedly include collections of some government agency publications unavailable elsewhere, the legislative library is located in the Capitol Building. It is used by researchers in public administration and economics as well as by staffs of the Commonwealth House and Senate.

Supreme Court Library

The main beneficiary of a limited deposit law dating back to 1912, this institution automatically receives copies of all statutes and court decisions originating within Puerto Rico's legislative and judicial systems. It had some 62,000 book and periodical volumes as of 1974.

Other Commonwealth Agency Libraries

These are scattered among most of the island's nearly 100 agencies and public corporations. Perhaps the most important are the library of the Economic Development Administration and that of the Government Development Bank, which attempt to maintain current material on Puerto Rico's rapidly changing economy.

THE UNIVERSITY OF PUERTO RICO LIBRARIES

In 1966 the Puerto Rican Legislative Assembly approved the University Law, which established an overall University System with a president as its director and individual chancellors for the three main campuses: Río Piedras, Mayagüez, and Medical Sciences. Each of these campuses maintains its own library system.

University of Puerto Rico General Library

This Río Piedras main campus institution, together with its departmental branches, far and away dominates the library scene with close to 1.6 million total volumes and annual circulation (1975) of nearly 773,170. In the absence of a San Juan Metropolitan Area public library network, it does double duty as a reference collection for the general public and for public school students, besides serving the needs of UPR students and faculty. In addition, it is heavily used by students from private universities and from smaller campuses within the UPR system. Administratively, the General Library is divided into the broad areas of Technical Services and Contact Services. The General Library is a depository for federal and United Nations documents. At least two special collections within the main library building deserve separate comment and description.

The Puerto Rican Collection [*Biblioteca y Hemeroteca Puertorriqueña*]. A de facto national library for the island, this book and periodical collection attempts to gather and preserve everything printed or published in Puerto Rico. Commonwealth and local government documents figure heavily among its holdings, although (due to lack of a general deposit law) one cannot count on government materials to always find their way to the stacks of this library within a library. All materials are restricted to consultation within the ample reading room housed within this division. Extra copies of some of the collection's titles, however, are cataloged separately and placed in the General Library's circulating collection where they may be borrowed for outside use.

The Caribbean Regional Library. A wing of the Commonwealth of Puerto Rico Department of State, this collection of 116,000 book and periodical volumes covers the entire Caribbean region (with some emphasis on the English-speaking Lesser Antilles). The library has had funding problems since its former parent body, the Caribbean Economic Development Corporation, was phased out of existence. In recent years it has depended almost entirely on donations for new additions to holdings, with funds provided by the Puerto Rican government going for salaries and upkeep only. The tie-in with the UPR General Library is an informal one; the latter institution has made space available within its main building for the Caribbean library's holdings. As of 1976 it was the intention of the Caribbean Regional Library to remain permanently headquartered in the UPR building.

Library of the School of Medicine

This library serves not only the new Medical Sciences Campus but also the physicians and hospital staffs of the metropolitan area and the island. The library contains approximately 77,048 volumes, including journals, selected with special reference to the instruction offered at the school. Some 8,651 periodical titles are received regularly. It maintains two branch libraries, at the University District Hospital and at the Schools of Physical and Occupational Therapy, Nursing, and Speech Pathology. Photostatic copies of material not in the library are obtained through the document delivery service of the Southeastern Regional Medical Library Program with headquarters at Emory University in Atlanta, Georgia, from other libraries of the University of Puerto Rico, and in some special cases from the Library of Congress and other libraries in the United States.

The Library, Mayagüez Campus

The extension of the benefits of the Morrill–Nelson Act to Puerto Rico in 1908 made possible the university's growth. The necessity of developing a College of Agriculture had been pointed out as early as 1907 by directors of the Federal Experiment Station in Mayagüez. For several years, courses in agriculture were offered at Río Piedras and other localities, but the College of Agriculture was not organized at Mayagüez until 1911. The University Law of 1966 placed the Mayagüez Campus under the authority of a chancellor and organized it into three col-

leges, each under a dean: the College of Agriculture, the College of Engineering, and the College of Arts and Sciences. Until the summer of 1963 the Mayagüez Campus Library was housed in small and inadequate facilities. Since the new library building was completed, its collection has been housed in a modular structure, air conditioned, with space for 300,000 book volumes and a seating capacity of 1,200. As of 1975 there were 482,867 volumes of books, public documents, and periodicals. The holdings are mostly scientific and technical, but a balanced collection in the Social Sciences and the Humanities is being developed to meet the new demands of the Mayagüez Campus's expanding academic program.

EDUCATION

Until 1968–69 there was no graduate-level library science instruction within Puerto Rico. In that academic year a 49-week graduate institute was conducted at the University of Puerto Rico as a preliminary program prior to formal establishment of a Graduate School of Library Science. Previous UPR policy had been to encourage, and in many cases help to finance, study by university library subprofessional employees in the United States. The Graduate School, founded in 1969 and headed by Acting Director Arturo Fernández, has a current enrollment of 92 students, virtually all of whom are pursuing master degree programs geared to academic librarianship.

The public and special library field still lacks a program of professional training in Puerto Rico, much to the dismay of public library specialists within the Public Education Department. A limited program of 15 credit hours is offered, however, to public school teachers seeking certification as school librarians. As of 1975 there were about 500 such librarians in service at an equal number of school libraries.

As the nonacademic librarian profession gains in status and salary compensation within Puerto Rico, it is expected that the Graduate School of Library Science will expand its course offerings and enrollment to help meet the potential demand for professionals within these fields.

RESEARCH AND PROFESSIONAL ACTIVITY

Of various attempts in the late 19th and the 20th centuries to establish a viable professional organization, the most successful effort so far has been the development of the Sociedad de Bibliotecarios de Puerto Rico [Puerto Rico Librarians Society]. Founded April 27, 1961, the society has irregularly published journals and newsletters and has encouraged library and bibliographical research through its annual conferences and semiannual regional gatherings. Some of the more important papers presented at recent conferences have been published in the society's monographic series, *Cuadernos bibliotecológicos*. The society has also published two editions of a fairly complete directory of Puerto Rican libraries (see the Bibliography). This work was compiled by Josefina del Toro Fulladosa (1901–

1975), one of the society's founding leaders; she served for 44 years in the University of Puerto Rico General Library until her retirement in 1969, at which time she had held the post of library director for 5 years.

The society maintains contact with foreign professional groups and is a member of the International Federation of Library Associations. Starting in 1970, the society has awarded an annual library science scholarship. It has served in an advisory capacity to various government and private libraries and library programs.

On the international front, Puerto Rican academic librarians have been quite active in recent years in the Association of Caribbean University and Research Libraries. Besides the University of Puerto Rico libraries and research centers—which comprise the largest member institution within the Caribbean (several Central and South American university libraries also belong, as do the libraries of the University of Florida–Gainesville and the University of Miami)—Inter American University and the Commonwealth Public Education Department are full members. The association has held a number of conferences in Puerto Rico, including its December 1972 annual assembly.

DEVELOPMENT OF DOCUMENTATION

Pioneer public librarian Gonzalo Velázquez (1905–) retired from his Public Education Department post in 1970 to devote full time to a project he began back in 1948: the *Anuario bibliográfico puertorriqueño*. This exhaustive listing of printed publications has begun to achieve the status of a current bibliography, with the annual volume appearing no more than 2 years after the year covered.

Some current coverage has also been provided through the sections on Puerto Rico in the *Handbook of Latin American Studies*. Publications within the United States, where Puerto Rican studies programs mushroomed in the 1970s, are well covered by the various U.S. abstracting and indexing media. The handiest retrospective source is Paquito Vivo's *The Puerto Ricans* (see the Bibliography).

Earlier efforts at tracing the island's publication output include a slim volume by Manuel María Sama, *Bibliografía puerto-riqueña* (Tipografía Comercial-Marina, Mayagüez, 1887), that listed 250 books published from 1831 through 1886. A landmark 707-page study by multitalented Puerto Rican journalist Antonio S. Pedreira, *Bibliografía puertorriqueña* (see the Bibliography), was issued in 1932 and is still consulted for coverage of works published in or concerning Puerto Rico up to 1930.

Impact of Puerto Rico–United States Relations

An increasingly bilingual society is bound to suffer special problems as it attempts to deliver educational and cultural services to all of its citizens. Puerto Rico's mixed used of Spanish and English underwent changes in emphasis as island residents achieved more local self-government in the 1940s and 1950s. Proclamation of the Commonwealth in 1952 culminated the trend toward favoring the use of

Spanish in education and in government proceedings and publications. English, however, still remained the dominant language in finance, industry, and larger commercial concerns through the mid-1970s.

LANGUAGE IN THE SCHOOLS

User demands upon libraries are heavily influenced by the language in which the current generation of students receive instruction. A somewhat less obvious consequence of bilingualism for public libraries is the language-study background of older users, especially those who went to school before the 1950s.

Until 1950, U.S. administrations in Puerto Rico had generally enforced the use of English as the primary language of public school instruction, with Spanish relegated to the status of a second language. Parochial and private schools, whose students are generally encouraged to seek careers in private business, still tend to use English in the classroom for all subjects except Spanish language and literature.

LANGUAGE AND LIBRARY HOLDINGS

A universal complaint of primarily Spanish-speaking library users concerns the relative weakness of Spanish-language holdings in most major Puerto Rican libraries. Conversely, native English speakers who have come to Puerto Rico from the mainland have complained of the dearth of modern English-language works at the metropolitan area's main public facility, the Carnegie Library.

A vocal, well-organized group of mainlanders took direct action to promote English-language library service in the late 1960s, during a period when the Carnegie building was totally closed for structural repairs. They formed the Volunteer Library League, Inc., eventually opened an attractive lending library in the Santurce business district, and through frequent fund-raising appeals and some government grants have managed to keep this voluntary public library open through the mid-1970s. The physical condition of the library and the quality of the collection have begun to deteriorate seriously, however, in the absence of full-time professional supervision and sustained and adequate funding.

No corresponding effort by private citizens has yet emerged to promote public library services to the Spanish-speaking majority. The Public Education Department has begun, however, to reverse the trend of predominant purchase of English materials for its growing network of small public libraries. It is in the area of older and classic works that Spanish books remain in short supply.

BILINGUALISM AND ACADEMIC LIBRARIES

Since Puerto Rican academic and research libraries must serve much of the user demand that is met elsewhere by public libraries, the degree to which university and special institutions achieve a desirable language balance has a direct effect on efficiency of library service to the general public. With Spanish achieving increasing dominance over English as the lecture-hall language in both public and private

institutions of higher education, students and faculty also feel a growing need for Hispanic materials.

These needs were far from being met by any of the island's academic libraries through the mid-1970s. At the University of Puerto Rico General Library, the situation had changed little since the weakness of Spanish-language book procurement was documented by Jesús Cambre Mariño in 1970 (see the Bibliography). Retrospective holdings also reflect this tendency; hard statistics are unavailable, but the predominance of mainland librarians among General Library staff professionals in its early decades, coupled with the former use of English as the classroom language, make it seem likely that the rough two-to-one edge held by English over Spanish current accessions also extends to older holdings.

The problem is more severe at private universities. Spanish materials have been in especially short supply at the libraries of Inter American University, which developed an ultramodern central processing center at San Juan in the early 1970s but apparently failed to intensify its acquisitions of Spanish-language print materials. Weakness of these and other private college libraries impels many of their students to seek Spanish material at the University of Puerto Rico libraries, thus boosting the already severe strain on the Spanish-language holdings there.

BILINGUAL SERVICE TO MAINLAND PUERTO RICANS

Perhaps ironically, the greatest strides forward in delivering bilingual library service to Puerto Ricans have come in recent years within Hispanic communities on the U.S. mainland. In the New York Public Library system, the names of Pura Belpré and Lillian López are associated with a sustained effort since World War II at service to the Spanish-speaking. With significant Puerto Rican communities in virtually every large U.S. city, New York's programs have been successfully copied by a number of municipal library systems.

Helped by growing availability of federal funds for minority studies, dozens of U.S. universities have launched Puerto Rican studies programs and have taken steps to beef up their general collections of works in Spanish.

In fairness to libraries serving residents of Puerto Rico, it must be noted that funding sources are much scantier there than in the mainland United States. The very nature of the "free associated state" relationship between the Commonwealth and the U.S. federal government tends to limit levels of federal aid to the island, whose permanent residents are exempt from payment of federal income taxes. Federal aid to the Puerto Rican public library system reached an annual $837,083 rate in fiscal 1975–76, mainly through Library Services and Construction Act grants; the permanence of this program was in doubt, however, as of 1977.

Future Prospects

The Public Education Department began moving in the mid-1970s toward development of a truly islandwide library network with collection depth in its cen-

tral library. Following formation of a State Advisory Council on Libraries in 1974, the department commissioned private consultants to conduct a thorough study, *Public Library Needs, Survey and Analysis.* Issued in October 1975 (see the Bibliography), this study called for conversion of the University of Puerto Rico General Library into a full-fledged National Library at the hub of the public library network, and urged the department to grant operating autonomy to its Public Libraries Division. Sharp and progressive increases in per capita funding for library services (then at the level of 70¢ per person compared with $5.58 per capita in 44 of the largest U.S. mainland library systems) were advocated. Also recommended was a boost in public librarian compensation to salary levels within the University of Puerto Rico system.

For funding of publicly supported libraries to reach acceptable long-term levels, per capita income must rise accordingly. Although the island's per capita GNP has reached the $2,275 mark, the tax base is severely limited by the exempt status enjoyed by most of private industry and many other areas of economic activity. With the Commonwealth in the midst of an austerity program and with a running budgetary deficit expected to continue through the late 1970s, short-term hopes for greater investment in library resources seem slim indeed.

BIBLIOGRAPHY

American Library Directory, 1974–75, 29th ed. (compiled biennially by Helaine MacKeigan), Bowker, New York and London, 1974, pp. 1035–1038.

Betancourt, José A., "Library Service to Puerto Ricans: An Overview," in *Puerto Rican Perspectives* (Edward Mapp, ed.), Scarecrow Press, Metuchen, N.J., 1974, pp. 97–103.

Burgess, Robert S., "Education for Librarianship: U.S. Assistance," *Lib. Trends*, **20**, 515–526 (January 1972).

Cambre Mariño, Jesús, "Distribución linguistica de las adquisiciones en la Biblioteca General de la Universidad de Puerto Rico," *Biblioteconomía*, **27**, 6–18 (January–December 1970).

Cruz Monclova, Lidio, "El libro y nuestra cultura literaria," Sociedad de Bibliotecarios de Puerto Rico, San Juan, 1974, 11 leaves, mimeographed (*Cuadernos bibliotecológicos*, No. 9).

Hernández de León, Carmen, "Legislación bibliotecaria en Puerto Rico; sus implicaciones en la adquisición de materiales y en el desarrollo del programa," Sociedad de Bibliotecarios de Puerto Rico, San Juan, 1970, 13 leaves, mimeographed (*Cuadernos bibliotecológicos*, No. 1).

Lewis, Carroll, "Bootstrap Library Drive Succeeds in Puerto Rico," *Lib. J.*, **95**, 1813–1815 (May 15, 1970).

López, Lillian, with Pura Belpré, "Reminiscences of Two Turned-on Librarians," in *Puerto Rican Perspectives* (Edward Mapp, ed.), Scarecrow Press, Metuchen, N.J., 1974, pp. 83–96.

Morales Carrión, Arturo, "Reflexiones sobre la biblioteca en Puerto Rico; palabras pronunciadas en el acto de inauguración de la nueva Biblioteca del Ateneo Puertorriqueño." San Juan, 1971, 14 leaves, mimeographed.

Pan American Union, Columbus Memorial Library, *Planeamiento nacional de servicios bibliotecarios*, Vol. 2, Part 2: *Colombia y Puerto Rico*, Washington, D.C., [1972?], pp. 19–54 (*Estudios bibliotecarios*, No. 8).

Pedreira, Antonio S., comp., *Bibliografía puertorriqueña*, Universidad de Puerto Rico, Río Piedras, 1932, 707 pp. (Monographs: Ser. A, *Spanish Studies*, No. 1).

Puerto Rico, Departamento de Instrucción Pública, "Public Library Needs, Survey and Analysis . . . Final Report of the Results of a Survey Conducted by the Synectics for Management Decisions Inc. . . . Pursuant to a Recommendation from Its State Advisory Council for Public Libraries," Hato Rey, Puerto Rico, 1975, 1 vol., various pagings, mimeographed.

Sociedad de Bibliotecarios de Puerto Rico, "Report of Activities, 1966–1972," in *IFLA Annual 1973* (International Federation of Library Associations), Verlag Dokumentation, Munich, 1974, pp. 188–189.

Thompson, Lawrence S., *Printing in Colonial Spanish America*, Archon Books, Hamden, Conn., 1962, pp. 94–101.

Thompson, L. S., and J. Rivera Ruiz, "The Libraries of Puerto Rico," *Lib. Quart.*, **16**, 225–238 (July 1946).

Toro, Josefina del, comp., *Guía de bibliotecas de Puerto Rico*, rev. ed., Sociedad de Bibliotecarios de Puerto Rico, San Juan, 1971, 63 pp.

Velázquez, Gonzálo, *Anuario bibliográfico puertorriqueño, 1948–*, Río Piedras, 1950–.

Vivó, Paquita, comp., *The Puerto Ricans: An Annotated Bibliography*, Bowker, New York and London, 1973, xv, 299 pp.

RAFAEL R. DELGADO
JOHN VAN HYNING

THE PUNJAB LIBRARY ASSOCIATION: ITS HISTORY, AIMS, AND OBJECTIVES

Background

The library movement in the modern sense originated in the Punjab when in 1915 the University of Punjab, Lahore (now Pakistan), invited Mr. Asa Don Dickinson of the University of Pennsylvania to reorganize the University Library on modern scientific lines. He introduced the Dewey Decimal Classification System and the open-access shelf system in the University Library. Dickinson also started a Library Training Class in which he trained librarians of college and university, public, and special libraries in the most recent library methods and instilled in them the idea that they were to be not merely custodians of books but friends and guides of those using their libraries. He founded the Punjab Library Association, of which Dr. A. C. Woolner was the first president. He was the vice-chancellor of the Punjab University and played a very large part in development of libraries in the Punjab.

After Mr. Dickinson's departure to the United States, the association collapsed into what might well be described as "suspended enthusiasm," and it remained inactive until October 1929 when some librarians in Lahore formed the Librarians Club. This organization with admirable daring took upon itself the heavy responsibility of holding the seventh session of the All-India Public Library Conference in December 1929. The conference proved a great success and the Punjab Library

Association came to life again. Its objects were "to further establishment, extension and development of libraries and to increase the usefulness of public, college, school and other libraries and to make them a vital factor in the educational life of the communities they are intended to serve."

These objectives are further and perhaps better defined in the Bylaws of the association wherein they appear under seven distinct heads. These heads, of course, are subject to alteration or elimination as necessity arises, and may possibly be modified at the annual general meetings of the association. The objectives include:

1. To further the establishment, extension, and development of libraries. This is done directly by writing and publication of the *Modern Librarian*, which was established by the association in 1931, and by showing the value of the library to community, city, or state. Indirectly, it is done by trying to encourage good reading habits by timely reviews. In the development of libraries, the association has played a fairly vigorous part. Suggestions as to library management and method are both sought and followed. The following object, then, has in part been attained.
2. To promote better administration of libraries by giving advice and assistance to library authorities in the organization and administration of libraries. Meetings of the association and of the Council of the association also have their bearing on this purpose, and by useful discussion and comparison, advance it.
3. To promote more widespread love of reading among the people by conducting lectures, exhibitions, and reading contests among students in the use of books and libraries, and on other popular subjects.
4. To increase efficiency in library service by uniting all persons engaged or interested in libraries by holding conferences, seminars, and meetings for discussions on subjects concerning library work.
5. To publish books or booklets concerning library development in India and particularly in Punjab.

Early Conferences

The second conference of the Punjab Library Association was held at Lahore on April 28, 29, and 30, 1932, in the Y.M.C.A. Hall. It was a great success—greater than the previous conferences, including even that held in 1929. About 1,000 delegates and visitors attended the open session of the conference on the 29th. Y.M.C.A. Hall was decorated by means of inspiring mottoes such as: Libraries are not luxuries but necessities of life; The library is a tool par excellence to hew down the tree of ignorance; A city without books is a city without light; The man who reads is the man who succeeds; and Read much, think more, talk less.

Lady Abdul Qadir, wife of the Honorable Justice Sir Abdul Qadir, presided. In her address, she said:

> The library movement was initiated in Punjab about 16 years ago and since then it has been growing day by day. It has as its objects the establishment of libraries and a wider spread of books among the people. The main object of the Punjab Library Association is to bring home to the people and the state the necessity of opening libraries everywhere, accessible not only to those who voluntarily enter

> their portals but also sending books to people's homes by means of systems of traveling libraries and creating in the masses a desire for reading.

After Lady Abdul Qadir's address, Dr. Woolner, vice-chancellor of the Punjab University and the president of the association, read his presidential address. After that address, Dr. F. Mowbray Velte, chairman of the council, Punjab Library Association, gave a short history of the accomplishments of the association.

Professor S. N. Das Gupta, vice-president of the association, appealed for funds for the Punjab Library Association. "Our aims are high, but our resources are few," said the professor, telling the audience that the Punjab Library Association, though the youngest of all associations, had done splendid work and achieved much during its short existence.

After the resolutions were passed, Lala Ram Chand Manchanda (advocate, High Court, Lahore, and president of the association for 1931–32) thanked Lady Abdul Qadir and the president, Dr. A. C. Woolner, for accepting the presidency of the conference.

On the third day an election was held and the following officers were chosen: the Honorable Justice Sir Abdul Qadir as president; Dr. F. Mowbray Velte, chairman of the council; Professor S. N. Das Gupta, vice-president; Mr. Ratan Chand Manchanda and Mr. Sant Ram Bhatia, secretaries.

The third conference of the Punjab Library Association was held in Government Training College, Lahore, April 13–15, 1933. Dr. S. K. Datta, chairman of the Reception Committee and the principal of Forman Christian College, Lahore, said:

> It is in that capacity that in the name of the Reception Committee, I would welcome you to the Lahore of evil smells and of dusty roads, most of them in an active state of dissolution. We trust that your visit to us will not have been in vain and that even in the narrow business of the Librarians' Craft we may have something to show you. . . . That the Punjab has a long and honorable history, it would be difficult to assert, but yet that history has not been altogether empty of glory. In this City, there are five famous libraries which all of you must visit: the Punjab Public Library, the Punjab University Library, the Dyal Singh Public Library, the Oriental College Library and the Forman Christian College Library. We await your commands. Visit our Libraries, Public and Academic, and we shall lay before you what treasures we possess.

The president of the conference was Dr. M. O. Thomas, librarian, Annamalai University. He said in his address:

> I thank the Council of the Punjab Library Association for the honor it has bestowed on me in asking me to preside over the third session of the Conference. If we really care for the education of the future generation of this country, we would strive not only for compulsory primary education, but also for the establishment of juvenile libraries. . . . "The primary duty of any government," Napoleon has said, "is the education of its people." In the words of President Hoover, "There is no safety for our Republic without education of our youth. That is the first charge upon all citizens and local governments. The proper care and training of the nation's children is more important than any other process that is carried on by our Government."

In 1936–37, Sir Manohar Lal, M.A., M.L.C., Bar-at-Law, was elected as the president of the Punjab Library Association. Dr. F. Mowbray Velte, chairman of the council, went on furlough and Reverend Dr. E. D. Lucas, M.A., Ph.D., chairman of the Punjab University Library Committee, served as chairman of the council.

Publications

During the year 1944–45, the Punjab Library Association published 30 booklets in its "Library in India Series." The majority of these are now out of print.

The *Modern Librarian* completed 15 volumes. It included a large number of articles on library control, book selection, and matters of technical importance to librarians; a bibliography of the writings by and on Dr. S. R. Ranganathan; 60 books on India with brief reviews and comments; brief sketches of the last All-India Library Conferences; and articles on the library movement as it manifested itself in different parts of India. It received and printed reports from all over India, and was in that sense truly what it claimed to be—an all-India journal. The *Modern Librarian* was published at the Forman Christian College Library, Lahore.

Activities During the Years 1945–1966

In 1945 the Punjab Library Association, in cooperation with the India Book League, sponsored the Library Conference, a symposium on "The Book in India," and a book exhibition, organized in the Punjab University Hall. Mr. T. D. Waknis, former curator of Maharashtra State, inaugurated the meeting. The late Professor M. G. Singh of the Punjab University presided.

After the partition of the country, the Punjab Library Association shifted its office and activities to Simla. Professor D. C. Sharma, M.P., became its president. The annual conference was held at the Y.M.C.A. Hall, Simla, October 2–3, 1948. The conference was inaugurated by the late Honorable Mr. Justice Teja Singh, vice-chancellor, University of East Punjab. The welcoming address to the delegates was read by Rai Bahadur Dr. K. C. Khanna, deputy director, Public Instruction, and chairman of the Reception Committee.

The Annual Conference and Book Festival of the Punjab Library Association was held at Simla on November 16th and 17th, 1949. The inaugural address was read by the Honorable Sardar Narotam Singh, minister for education, Punjab.

During the years 1950, 1951, and 1952, conferences and seminars and book exhibitions were held at Simla. They were inaugurated by the Chief Justice, Sir Eric Weston, I.C.S.; and the Honorable Mr. Justice G. D. Khosla, I.C.S., of the Punjab High Court, at Simla. Professor D. C. Sharma, M.P., presided over the conferences.

In 1952 Shrimati Vijaylakshmi Pandit, M.P., inaugurated the Book Festival and Professor N. K. Sidhanta of the Union Public Service presided over the librarians' conference. Librarians from all over the Punjab attended the conference.

Shri C. P. N. Singh, governor of the Punjab, inaugurated the All-India Book Fes-

tival and Punjab Library Conference held in the Town Hall, Jullundur City. Dr. A. C. Joshi, vice-chancellor, Punjab University, Chandigarh, presided over the conference.

Golden Jubilee Celebrations of the Punjab Library Association, 1916 to 1966, were celebrated in the Central State Library, Chandigarh, in December 1966. They were presided over by Dr. M. S. Randhava, I.C.S., chief commissioner, Union Territory, Chandigarh. Meritorious Library Service Awards were presented to the senior librarians and to Mr. G. L. Trehan, secretary of the Punjab Library Association. A book exhibition cosponsored by the Punjab Library Association; the Central State Library, Chandigarh; and Central Public Library, Patiala, was organized. Over 1,000 people attended the function and saw the exhibition. The booklet *Fifty Years of Library Movement in Punjab,* by Mr. G. L. Trehan, was distributed to the visitors and librarians.

The office of the Punjab Library Association is at 233, Model Town, Jullundur-3, India.

SANT RAM BHATIA

PUTNAM, HERBERT

See also *Library of Congress*

Herbert Putnam—librarian of Congress, 1899–1939—was born in New York City on September 16, 1861, the sixth son and tenth child of George Palmer Putnam (the publisher) and his wife Victorine Haven Putnam. Indeed, after the engagement of George Palmer Putnam to Victorine Haven, he wrote a letter to her from the Library of Congress, Washington, D.C., dated June 4, 1840—possibly a premonition of Herbert Putnam's future 40 years of service as the librarian of Congress.

In the *Thirtieth Anniversary* report (1913) of his Harvard Class of 1883 (*1*), Herbert Putnam described very plainly the course of his ascent to the Library of Congress, as follows:

> Was prepared for college by J. H. Morse, of New York, and was admitted to Harvard in June, 1879.
>
> The first year after graduation was spent at the Columbia Law School. In the Fall of 1884, I removed to Minneapolis, where a year later, I entered the Minnesota Bar. Meantime had become Librarian of the Minneapolis Athenaeum and continued as such until the Athenaeum became merged with the new City Library, which I helped to organize, and of which I was in charge until December 1891. I then resigned the post, removed to Cambridge, was admitted to the Suffolk Bar, and practiced in Boston until 1895, when I was elected Librarian of the Boston Public Library. On March 13, 1899, was nominated by President McKinley, Librarian of Congress and on April 5th entered upon that office, which I still hold.

This modest statement certainly needs supplementation, and this has been done by R. R. Bowker (the bibliographer, editor, and publisher) through his article "The Appointment of Herbert Putnam as Librarian of Congress" (2), in the 30-year *Festschrift:*

> Honor to Herbert Putnam! The best service for the library profession in which I have participated since the organization of the American Library Association, was when associated with Librarian Lane of Harvard, in the conference with President McKinley, which resulted in Herbert Putnam's appointment as Librarian of Congress in 1899. To the energy, firmness and tact of William Coolidge Lane, President of the American Library Association for the year 1898–99 is largely due the benefit of that selection.

Then Bowker mentioned that Ainsworth R. Spofford, librarian of Congress since 1864, had retired in 1897, on the eve of the move from the crowded quarters in the Capitol into the commodious (at that time) new building for the Library of Congress. He was replaced by John Russell Young, "a well-known journalist, with many Washington friends [who] was appointed to the post of Librarian of Congress by President McKinley, although he had no library training or special equipment for the work. It was understood that Mr. Putnam had been suggested, but that he had declined to be considered for the post . . ." (2). Mr. Young died on January 17, 1899.

Bowker pointed out that the position of librarian of Congress was generally considered to be a political appointment (and it still is today), and stated that "no trained librarian offered himself or was proposed for the post. . . ."

Then, Bowker continued, the day after Mr. Young's death, Samuel J. Barrows—a resident of Massachusetts and a member of the expiring Congress, and a man of some literary acquirements and political experience—sent a letter to Mr. Lane, in which he said that his name had already been presented to the president. Barrows explained that he had been suggested as a candidate by Secretary Long (who was also a Massachusetts man), and he asked Mr. Lane's support. As president of the American Library Association, Mr. Lane replied in a careful and courteous letter, stating that he could not comply with Mr. Barrow's request since the library profession emphasized the importance of library experience in the position. In the meantime, President Lane took pains to obtain the views of the ALA Council members individually, and on January 23 he wrote to President McKinley, in his capacity as president of the association. The letter emphasized the importance of the post and of having a librarian of training and experience in it—a communication which was, as it turned out, a prophecy of what the development of the national library would be under such a librarian as Lane described. On January 30 a memorandum from the ALA Council, to the same effect, was sent to President McKinley. Bowker reported the next steps in the selection process:

> An appointment was made with the President, I think through Senator Lodge, for Saturday morning, February 4, when the "Federal Express" was to bring Mr. Lane to Washington, where I was asked to meet him. I had previously arrived at Washington and went early to the White House and there found in the crowded

> anteroom Senator Lodge and Mr. Barrows. In conversation with the latter, I told him frankly that the members of the Association favored a trained librarian for the post if one could be had, but that in default of such his candidacy seemed preferable to that of others; and Mr. Barrows replied as frankly that if such a librarian were in the running he would not himself be a candidate. This casual remark was not borne out in later developments, although apparently sincere at the time . . . (*2*).

Then Mr. Bowker was advised that President McKinley would see him and Mr. Lane if they could present themselves before his luncheon engagement at 2 P.M.; he set off on the search for Lane, and they were able to present themselves without too great delay. When they urged the importance of a trained librarian in the post, Bowker wrote, "President McKinley volunteered the word if there were a trained librarian like Mr. Dewey or Mr. Putnam available for the post, he should be glad to appoint him, and particularly he would like to appoint Mr. Putnam for he had such pleasant remembrance of his father, the late George Palmer Putnam." The report of the meeting and subsequent events continued:

> The President then explicitly authorized Mr. Lane to offer the post to Herbert Putnam in his name, and that Mr. Lane did immediately on his return to Boston, Monday, February 6. . . .
>
> The salary [Putnam's] in Boston was fairly adequate, while that in Washington was only $5,000, although the cost of living there was much higher. When word of his reluctance reached me in New York, being myself an oldtime friend of the Putnam family, I consulted its members with the purpose of urging Herbert to take the post. As a result, there was a luncheon consultation at the Reform Club, to which Herbert came from Boston, and at which George Haven Putnam, J. Bishop Putnam, and Irving Putnam joined me in urging their brother to accept the position proffered by the President.
>
> Meantime, Speaker Reed had promised Mr. Lane to induce the House to make the salary at least $6,000 and Senator Lodge had promised like cooperation in the Senate, so that the advantage [was] at least secure, and it was expected that thereafter the salary should be made more adequate to the post, a hope which was not realized even in part for many years and not realized adequately even now when, during the past year [1929], the salary has been made $10,000.
>
> At last Mr. Putnam assented to acceptance of the opportunity and the word was duly transmitted to President McKinley as well as to Senator Lodge. But Mr. Barrows' ambition had meantime been stiffened and, in place of fulfilling his word to me, he insisted on right of way to the position. Under these circumstances, Mr. Putnam withdrew his acceptance, to the President's expressed regret, and on February 15 the nomination of Mr. Barrows was transmitted to the Senate, where it was referred to the Library Committee. Mr. Barrows' self-seeking and persistence had not impressed the Senators favorably and on February 28 Senator Hansbrough as acting chairman of the Library Committee reported adversely on the Nomination. On March 3 the Senate considered and debated the report but on March 4, a quarter of an hour before final adjournment at noon, the Senate on motion proceeded to other business and the nomination failed of vote pro or con. President McKinley then formally proffered a recess appointment to Mr. Barrows which, in view of the senatorial situation, he declined.
>
> On March 7 Mr. Lane again wrote to the President regarding Mr. Putnam. President McKinley then, on March 13, made the recess appointment of Herbert

> Putnam as Librarian of Congress and he took the oath of office April 5, 1899 and began the thirty years' service which has made the Library of Congress what it is today. The recess appointment was notified to the Senate at the opening of the new Congress, December 6, and Mr. Putnam was duly confirmed December 12. One of the librarian's early and most kindly acts was the appointment of Mr. Spofford as assistant librarian, a fitting acknowledgment of the respect and esteem in which he was held by his associates of the library.
>
> In these thirty years the Library of Congress has become indeed the center for library activities for the nation and been made the foremost library in the world. Not since the days when the great Panizzi began the real development in the British Museum of the British national library has such service been done to all the people through a great library as has been done in America by Herbert Putnam, the nation's librarian (*2*).

President Lane and the Council of the American Library Association, and probably also Mr. Bowker, had good reasons for presenting so firmly and persistently to President William McKinley the candidacy of Herbert Putnam for the post of librarian of Congress. They had been impressed not only by Putnam's extremely well-balanced library records in Minneapolis and Boston, especially Boston, but by his address as president of the American Library Association in 1898. In that speech he had reported on international library activities in Europe and suggested that "the leadership among our libraries belongs to the Library of Congress" (*3*). These factors became especially important when John Russell Young, the journalist who had been appointed librarian of Congress only 2 years before, died rather unexpectedly in January 1899.

Let us continue with the rather plain statements that Herbert Putnam made in his Harvard Class of 1883 reports. In the 1913 report he said:

> In Boston my chief work was in adopting the library to the new building and in popularizing its facilities; in Washington, it has been in the nationalization of the Library of Congress by developing its resources for service to scholarship and by extending the benefits of its collections and of the technical processes to the country at large. I have made various trips abroad in its behalf. In 1905 and 1906, I called and presided over the conferences which led to the revision of the Copyright Laws (*1*).

Putnam continued the story of his career in the 1933 report of the Harvard Class of 1883 (*4*), as follows:

> The "story" of an executive absorbed in his job is in the main the story of the institution which he is administering; and mine, since 1913, has been a continuation of that which began in 1899 with my appointment as Librarian of Congress. One episode briefly interrupted it—the period from the autumn of 1917 to the autumn of 1919 when I served as director of one of the seven welfare agencies of the American Library Association War Service, devoted to the supply of reading matter to the American troops, preparing for, or engaged in the War. The service was extensive—covering the various cantonments in this country, and the training camps abroad, and, following the Armistice, continued circulation among the diminishing detachments, the maintenance of collections and reading rooms at Coblenz, a considerable establishment of the "A.E.F. University" at Beaune, books

and magazines for the transports, and even for the outlying posts—as at Vladivostok. It included numerous library buildings, a large personnel, typical American equipment and methods, over five million books, and the expenditure of about five million dollars. But the direction of it was from the main headquarters at the Library of Congress, and, except for some trips of inspection to the cantonments in this country, I was not personally "in the field" until December of 1918, when I went to France to supervise the remaining operations there and to "round up" the enterprise, which finally reduced itself to the activities of the American Library at Paris, still surviving, not as a mere "relic," but as a continuing demonstration of American library methods.

Except for that episode, my thought and my energies have been concentrated upon the administration of the Library itself. The problems of administration included many conventional in any large library of the research type; the aim in the development was obvious. It was, without ignoring the intensive duty to Congress itself and to the other governments: (1) to enlarge the collections to a degree and diversity really comprehensive; (2) to develop an apparatus for the use of them [that would be] quickly responsive; (3) to widen the service so as to embrace with it the serious public of general investigators; and (4) in whatever ways might be practicable, to render at least the by-products of our operations serviceable to other libraries of whatever type, in effecting economies in their own administration.

Though these aims encountered no opposition in Congress, they did require incessant explanation and effort. The final response has been in liberal grants for the accommodation of the collections (including, recently, authorization of an additional building in the nature of an annex), a reasonable provision for the acquisition of material, and a gradual increase in the personnel. But the two latter, and certain of the desirable activities, have required resources which could come only from private sources. With the creation of our "Library of Congress Trust Fund Board" in 1925 these began to come, in endowments and in gifts of money for immediate application. As the result of them the collections have been enhanced by a huge importation of source material of concern to the investigator, and the personnel by the accession to our staff (in the incumbents of our four "chairs," and in our corps of "consultants") of numerous specialists in various fields of learning, who with the equipment of teachers or investigators are not here to teach or to pursue research, but to aid in the serious use of the collections by assisting in the interpretation of them (*4*).

Putnam had accepted the appointment as librarian of Congress in the spirit of a duty, as a national service; he had accepted a reduction in salary with increased expenses. He then was unable to maintain a residence in Washington, D.C. This lack made it difficult to keep in touch with important people and problems of the day, an activity which was essential in his position as a national librarian. Therefore, at quite an early date after his arrival, Putnam worked out a substitute arrangement. There was a restaurant facility for the staff and users of the Library of Congress, on the top floor at the front of the building, facing westward toward the Capitol and the city. The librarian and some senior members of the staff arranged for a luncheon Round Table to meet in a large room at the northwest corner of this dining area. At these luncheon meetings, problems and information of the day could be talked over informally with important visitors and users of the Library of Congress. Relatively early, in 1906, the English writer H. G. Wells

included the following mention of the Round Table on page 237 of *The Future in America:*

> In all Washington, there is no clearing-house of thought at all. Washington has no literary journals, no magazines, no publications other than those of the official specialists—There does not seem to be a living for a single firm of publishers in this magnificent empty city.
>
> I went about the place in a state of ridiculous and deepening concern. I went through the splendid Botanical Gardens, through the spacious and beautiful Capitol, and so to the magnificently equipped Library of Congress. There in an upper chamber that commands an altogether beautiful view of long vistas to that stupendous unmeaning obelisk (the work of the women of America) that dominates all Washington, I found at last a little group of men who could talk. It was like a small raft upon a limitless empty sea. I lunched with them at their Round Table (*5*).

Herbert Putnam's 1933 account to his Harvard Class of 1883 (*4*) said of the Round Table:

> This addition to our apparatus of the human expert—in liaison relations between the collections and the public—is the most significant phase of the evolution of the institution, and one which, if it can be further developed and made permanent, will notably distinguish it; since to the collections and service typical of a library for research it adds a counsel and guidance habitually to be looked for only in a university or laboratory.*

Putnam continued his report of the development of the Library of Congress, and his personal life, as follows:

> The development is not, of course, just my story; but the story of my own twenty years (past) is so merged in it as to be insignificant apart from it. In the interest of it I have avoided association with outside enterprises not directly contributory to it, and have reduced merely social relations to a minimum. My family life has been eventful in the happy marriage of my elder daughter, Shirley, to one Eliot O'Hara, who after an (enforced) career as a manufacturer, is now a painter (and teacher) of water colors; in two children of the marriage (Desmond now aged seven, and June, nearing five); and in the successful career as a sculptor of my younger daughter Brenda. The death of my wife [neé Charlotte Elizabeth Monroe, of Cambridge, Mass.] in October, 1928, was the first of a series of personal losses—including in 1929 and 1930 two brothers and three sisters—for which there is no compensation.
>
> The administration of an institution such as the Library has many contacts, incidents, and adventures, outside of the routine. There have been—for me—several trips abroad in attendance at professional conferences, in the inspection of operations which for the past five years we have been maintaining there for the reproduction of source material for American history (under a grant from Mr. John D. Rockefeller, Jr.), and in general furtherance of our collections (*4*).

Even after becoming librarian emeritus in 1939, Herbert Putnam retained that same unselfish and relentless interest in the Library of Congress until he died at Woods Hole, Massachusetts, August 14, 1955.

* The Round Table was not continued under Archibald MacLeish and the later librarians of Congress.

REFERENCES

1. Harvard University, *Class of 1883 . . . Thirtieth Anniversary;* Herbert Putnam's report appears on pp. 155–157.
2. R. R. Bowker, "The Appointment of Herbert Putnam as Librarian of Congress," in *Essays Offered to Herbert Putnam . . .*, pp. 15–21.
3. "Address of the President: By Herbert Putnam, Librarian of the Boston Public Library," in American Library Association, *Papers and Proceedings . . . 1898*, pp. 1–7.
4. Harvard University, *Class of 1883 . . . Fiftieth Anniversary;* Herbert Putnam's report appears on pp. 276–280.
5. Herbert George Wells, *The Future in America, a Search After Realities*, Harper, New York and London, 1906, 259 pp.

BIBLIOGRAPHY

American Library Association, *Papers and Proceedings of the Twentieth General Meeting . . . Held at Lakewood-on-Chautauqua, N.Y., July 5–9, 1898*, ALA, New York, 1898, 197 pp.

Essays Offered to Herbert Putnam by His Colleagues and Friends on His Thirtieth Anniversary as Librarian of Congress, 5 April, 1929 (William Warner Bishop and Andrew Keogh, eds.), Yale Univ. Press, New Haven, Conn., 1929, [xi], 555 pp., frontispiece, plates, maps.

Harvard University, Class of 1883, *Class of 1883, Harvard College: Thirtieth Anniversary, Sixth Report*, Boston, 1913, 326 pp.

Harvard University, Class of 1883, *Harvard College, Class of 1883: Fiftieth Anniversary*, printed for the Class, Cambridge, Mass., 1933, 405 pp.

Putnam, George Haven, *A Memoir of George Palmer Putnam, Together with a Record of the Publishing House Founded by Him (privately published)*, G. P. Putnam Sons, New York and London, 1903, 2 vols.

United States, Library of Congress, *Herbert Putnam, 1861–1955: A Memorial Tribute*, Washington, D.C., 1956, v, 93 pp.

Contents: "Herbert Putnam and His Responsible Eye," by David C. Mearns; "Writings and Addresses of Herbert Putnam and Books and Articles About Him," by Helen Dudenbostel; and "Herbert Putnam, a Chronology," by David C. Mearns.

United States, Library of Congress, *Report of the Librarian of Congress, 1898/99–1938/39*, Government Printing Office, Washington, D.C., 1899–1940, 40 vols.

The first two reports by Herbert Putnam were more or less after the old pattern.

Waters, Edward N., "Herbert Putnam: The Tallest Little Man in the World," *Quart. J. Library of Congress*, 33(2), 150–175 (April 1976).

JAMES BENNETT CHILDS

QUEENS COLLEGE LIBRARY

An Urban Institution

The Library of Queens College illustrates very well certain trends that have also manifested themselves in other academic libraries, which makes its inclusion in this encyclopedia significant. It is one of 19 libraries of the City University of New York. In this group are seven community colleges, four established senior colleges (among them Queens), five more recently founded senior colleges, one graduate center, one affiliated medical school, and one college of criminal justice. The institutions are under the control of the New York City Board of Higher Education and administered by a chancellor. Their financial support comes mostly from taxes (for the senior colleges: 25% from the City of New York and 75% from the State of New York; for the community colleges: 40% from the city and 60% from the state). Students pay modest fees, but tuition was free until 1976 for resident undergraduate students—which may be one reason for the large enrollment. City University is the last remaining major municipally supported institution of higher education in the United States; most other municipal colleges or universities have become state supported (e.g., in Michigan, Pennsylvania, and Ohio). How long the City University will remain an institution supported, in part, by city taxes will depend on the financial ability of the City of New York. There have recently been severe budget crises, and it has been predicted by some that the entire support and control may become a responsibility of the state.

Most of the problems and difficulties encountered by Queens College and its library can be traced to its unstable financial base and its ties to a city which has suffered an enormous exodus of middle-class whites to the suburbs and an equally large influx of economically disadvantaged minorities. The effect has been an unrelenting erosion of the tax base, while the costs of municipal services and the number of welfare recipients have escalated. The colleges of City University (CUNY) are greatly underfinanced as compared to the colleges of the State

University of New York (SUNY), and they have far poorer physical facilities. Yet the quality of the CUNY faculty and its librarians has remained high (partly because of an above-average salary scale to compensate for the high cost of living in the New York metropolitan area, and partly because New York City has a drawing power as a cosmopolitan and cultural center for many academicians). The demand for higher education in New York City has increased year after year, while at the same time, the colleges have opened their doors to many who had previously been denied admission to higher education. Since 1969 CUNY has also had open admission to all high school graduates. Many of the students are in need of remedial instruction and special counseling to survive in the academic environment.

The Queens College campus is located in Flushing, which is part of the Borough of Queens of New York City, about 12 miles east of Manhattan. It differs from many urban colleges in that its campus is still not too hemmed in and congested, and it has some modest landscaping. Adjacent to the fenced-in campus are apartment buildings and a "boulevard," and an expressway with heavy traffic. Its student body consists entirely of commuters.

Physical Facilities

The Library of Queens College was started soon after the college was founded in 1937 and first occupied space in the college's Administration Building. Plans for a library building, begun in 1939, were delayed because of World War II and were not completed until 1948. Construction of a new library building, named after the college's first president, Paul Klapper, was completed in 1955 at a cost of $3 million. The building had a capacity for 500,000 volumes and 1,400 reader seats, which seemed ample for the envisaged maximum enrollment of 4,000 students and the book collection (which then numbered about 100,000 volumes and was growing at a rate of less than 10,000 volumes a year). No one could have foreseen that, within less than 20 years (by 1974), the college's enrollment would grow to over 17,000 (in terms of full-time equivalents), and that the book collection would fill the building beyond capacity.

The years from 1955 to 1975 witnessed a tremendous expansion of higher education in the United States, and Queens College's library was overwhelmed by this demand to the point where its building became inadequate and outmoded. Steps toward a new building had to be initiated in 1975, with plans for a book capacity of 1 million volumes and the possibility of 5,000 reader seats (on the assumption that enrollment would become stabilized). If the 1955 building had been built with proper provision for future expansion and internal flexibility, a completely new building might not have been needed in 1975—but no adjacent land area had been specifically reserved for expansion. Also, the T-shaped building has a fixed-function, low-ceilinged bookstack and high-ceilinged reading areas and mezzanines.

It took 16 years from the drawing up of the first tentative plans to the comple-

tion of the existing building; planning consumed the attention of two chief librarians in succession (Charles F. Gosnell, 1939–1945; and Morris Gelfand, 1946–1969), both of whom did their best but had little control over the circumstances responsible for the delay. The organizational machinery for planning was ample and impressive, with an advisory building committee of outside engineering-school professors in existence for over 5 years, with a college building committee involved, with an advisory committee of prestigious librarians drawn from other libraries, and with guidance and direction from higher authority (Board of Higher Education's Architectural and Engineering Unit).

Perhaps that was a typical planning process, one similar to those which so many libraries experience; one wonders how one might achieve better results in similar circumstances. It is unfortunate that no air conditioning was provided, when 50% of the exterior walls of the reading rooms (facing mostly west, east, and south) are of glass; and that there are no public elevators in a 4-story building.

Granted that a building does not a library make—it is nevertheless true that an uncomfortable and inflexible building can be a severe handicap and can affect library service quite adversely. Queens College now has a campus master plan for the development of its physical facilities, which envisages four separate library locations (Graduate, Undergraduate, Science, Music). The indications are, however, that this plan may be changed to provide, instead, a single new structure to accommodate all libraries except a projected law library, the latter to be located a mile away from the main campus.

Organization of Reader Services

The library followed the trend that was fashionable in the 1940s, and organized its services by broad subject divisions. This plan was modified to provide two separate subject libraries: Music (started in 1938 and moved to the Music Building in 1961) and Art (started in 1955; it included a small museum collection of art objects). The broader subjects (Social Sciences, Humanities, Science, Education) were not set up with separate book collections and catalogs, but merely operated separate reference services. Social Sciences and Humanities were combined in 1971 and reconstituted as a central Reference Department. Education consisted of a Curriculum Materials Service plus a juvenile book collection and samples of teaching aids; and the Science "library" provided reference service and current-issue periodicals display and had its book collection located in the stack area closest to its reference desk. A genuine divisional plan—as had been developed at the University of Colorado and the University of Nebraska—could not be attempted due to the limitations of the library building. Some of the separate subject services are likely to be in jeopardy in the future if severe budget restraints continue, for it is less expensive to operate a library organized by form divisions (books, periodicals, reference). Other libraries (such as, e.g., California State University at Los Angeles) have had to abandon their subject divisions when the professional personnel budget was cut. Form divisions already exist at Queens College Library for

documents, microforms, and reserves, but not for periodicals. A combined periodical and microform service may be established in the near future, following a large acquisition of microfilmed back files of periodicals in 1974/75.

An important benefit of subject divisions derives from the opportunity to develop subject expertise among professional staff members; at Queens College, subject librarians not only work in reference service, but also carry primary responsibility for book selection and liaison with academic teaching departments.

The Book Collection and Book Selection

The book collection (numbering over 480,000 volumes, exclusive of government documents and microforms) grew at the rate of about 25,000 to 30,000 volumes a year until 1975. It is a collection of superior quality for its size; and it is highly selective, with notable strengths in music, art, education, and the sciences. From 1971 to 1975 selection was facilitated by a so-called approval plan, whereby a book wholesaler (first Abel and Company, of Portland, Oregon, then Baker and Taylor, of Somerville, New Jersey) sent regular weekly shipments of new publications and slips, based upon carefully prepared selection "profiles." These books were examined by the selection staff and faculty, and those considered suitable were approved and retained.

An increasing number of libraries have adopted such plans to relieve the staff of some burdens, to bring about greater continuity and conformity to policy in book selection, to ensure earlier arrival of books, and to provide an opportunity to examine and peruse books before they are acquired. Theoretically, an approval plan should allow the staff to shift its attention more to retrospective selection, collection reevaluation, and the selection of less widely distributed publications. However, if a book budget is inadequate, the advantage of the plan diminishes because too many books have to be returned for lack of funds. There are also some savings in clerical costs, since individual orders for items received on approval are no longer required. Some of the savings are offset by higher purchasing costs due to lower discounts. Approval plans depend on computer technology used by commercial concerns serving libraries: a library profile is fed into a computer, and books are selected for shipment to libraries automatically, in accordance with their respective profiles.

One problem is that there is as yet insufficient competition to give librarians enough choice in selecting the best supplier. As more companies enter this field, libraries will be in a better position to compare and evaluate service, discounts, and other aspects. The fear that an important professional function (i.e., book selection) is in danger of being usurped by commercial interests, and the fear that quality of selection will suffer may be justified in certain fields where categories are difficult to define and where quality or the lack of it cannot be easily detected by those without subject competence and book knowledge.

At Queens College, the approval plan was adopted with less than wholehearted enthusiasm. The main reason for some resistance may have been that a very liberal

amount of staff time had traditionally been allowed to be spent on book selection under the divisional plan of library organization, and there was some fear that quality would decline. The plan was suspended in 1975 due to an inadequate book budget.

Personnel and Management Problems

Librarians at City University (there are over 300) are reputedly paid fairer salaries than at many other libraries in New York and elsewhere; and, partly for that reason, it has been possible to raise standards and attract persons with superior academic qualifications. More librarians with two master's degrees or Ph.D.'s are employed at City University than at many of the most distinguished research libraries. One reason is that, since 1965, librarians have had full faculty status and titles. Also, in order to qualify for the first promotion (to the rank of assistant professor)—according to the Bylaws of the Board of Higher Education of City University—two master's degrees are required (or, in exceptional cases, some other combination of 2 years of graduate study or more beyond the bachelor's degree).

Library salaries have been favorably affected by the fact that the City University's faculty is paid according to an established salary scale. This salary scale is applied equally to all the "instructional" departments within a college, and the library has been officially recognized as an instructional department.

Much of the credit for the change should go to Robert B. Downs, former dean of Library Administration at the University of Illinois, who served as a consultant on library personnel practices of City University in 1964; he recommended faculty status for librarians to Chancellor Albert H. Bowker, who endorsed the recommendation. The benefits were not merely better salaries, but also a noticeable gain in recognition and appreciation of librarians, as well as greater official participation of the library staff in academic campus affairs.

Recognition of the library as a department of instruction and the introduction of faculty status also brought a demand for greater participation of the staff in internal library management and formulation of library policy. This demand resulted in the adoption of so-called departmental Bylaws, which were designed to ensure the staff's involvement in the governing of the library in a manner similar to the way the faculty of an instructional department operates. In practical terms, this meant that elected committees participated in determining appointments, reappointments, tenure, promotions, and budgetary matters; and that they provided an official channel for staff members to make suggestions. This method of governance at Queens College Library preceded by several years the adoption of the 1975 *Standards for College Libraries,* which called for the librarians of a college to be organized as an academic department and to follow the 1972 *Standards for Faculty Status for College and University Librarians.*

Compared with more authoritarian setups for library administration, the changes meant that a library director could no longer independently make major policy

changes without first formally securing the consent of the elected representatives of the professional staff. The consent of the governed led to a sharing in the formulation of policy, but this did not relieve the director of responsibility for the management of the library in the eyes of the college administration. Being a "chief librarian" (as directors are called at City University) became more difficult; and it became doubly difficult because of the need to comply with the elaborate provisions of the negotiated contract with the faculty union. These provisions cover detailed procedures and rules concerning appointments, leaves, work loads, performance-evaluation, maintenance of personal files, complaints, grievances, promotions, arbitration, salary schedules, overtime, research grants, etc.

Most other academic libraries have a position classification and pay plan, which provides for pay differentials depending on the difficulty or complexity of positions. Within each classification or level, salary increases are provided as recognition of meritorious performance. Moving to a higher classification is usually possible only if a person assumes a position of greater responsibility or complexity, or, at the lower levels, upon achievement of increased competence in performance.

At Queens College Library, as well as at other libraries of the City University, a classification and pay plan is not officially recognized as the primary factor determinative of faculty rank. Promotion to higher rank is expected to be based on factors analogous to those applicable to the teaching faculty. Such a policy means that excellence of performance as a librarian, and also publishing and professional activities, campus service, etc., are the primary criteria for promotion to higher rank—rather than a person's place in the table of organization. The abandonment of the principle that rank and pay should reflect level of responsibility inevitably created inequities in pay and rank among librarians doing similar work, and it even made it possible for heads of departments to have lower ranks and pay than those under their supervision.

In order to qualify for promotion, staff members tend to choose literary, historical, or similarly orthodox research projects, which often have no relationship to their work assignments and only a remote relevance to librarianship. Such endeavors tend to gain easier recognition and approval by faculty committees charged with screening recommendations for promotion than would research projects of a more pragmatic orientation.

There is considerable uncertainty and "schizophrenia" as to the type of effort which can be expected to earn a staff member a promotion. This situation is evidently not unique to the City University of New York, but also exists at other institutions where faculty status and titles have been granted to the library staff—however, little has been reported about the impact on staff morale and service of this emphasis on research and publishing as requirements for promotions. The separation of rank determination from a person's job assignment in a library may come to be recognized as damaging to the morale of the supervisory and middle-management staff of a library. The solution may lie in a recognition that faculty ranks and titles for libraries can be justified without rigid imitation of the faculty promotional system.

Automation

In discussing personnel, one must keep in mind that policies concerning salaries, status of librarians, tenure, promotions, union contracts, provision of paraprofessional and clerical help, etc., have a bearing on the cost of operating a library. At City University, improved working conditions, better status and salaries, and liberal fringe benefits have had the effect of pushing personnel costs higher than in many libraries elsewhere. Productivity is low, however, due to a chronic undersupply of subprofessional and clerical employees.

Automation appears to be a partial solution to the problem of increased productivity. At Queens College, a link to the Ohio College Library Center (OCLC) was established in 1974, with the installation of three on-line computer terminals. The effect has been a noticeable increase in efficiency and speed in preorder bibliographic and interlibrary loan searching, cataloging, and card production. Queens College was the first of the City University's libraries to install terminals. This linkage was accomplished via the State University of New York, which had signed a 3-year contract with OCLC that also allowed libraries outside the State University system to join.

Other developments involve the planned automation of circulation and acquisition routines. A minicomputer was purchased from Computer Library Systems, Inc. (CLSI), of Reading, Massachusetts, and it was installed in 1975. This minicomputer became operational in 1977. Funds for acquiring and maintaining computer hardware have proved easier to come by than added personnel. It is expected that these installations will save both professional and clerical staff costs in due time; but, equally important, they will also improve service.

Both of these developments (on-line linkage to a large bibliographic network and the installation of on-line, turn-key minicomputers with standardized software) are typical of what has been taking place in other academic libraries of medium and small size. Only very large libraries—if supplied with grant money—are likely to be able to develop homemade systems tailored to their specific needs.

Links to Libraries Outside City University

A college library in the largest metropolis of the United States can take advantage of the rich library resources in its area. If it were located in a more isolated spot geographically, it would have to have a much larger collection in order to meet the research needs of its faculty and graduate students. Although Queens College has a good basic collection of books, periodicals, documents, bibliographies, and other library materials, it will never be a large or comprehensive research library.

Those who need larger resources must use the university libraries of Columbia, Yale, Princeton, or the New York Public Library, etc. There they may have to pay a fee as outsiders, and Queens College has at times provided such fees for its research faculty. A more important resource is the New York Interlibrary Loan System (with headquarters in Albany, and operated by the New York State Library), which provides excellent service in locating and furnishing, by mail, books and

photocopies of periodicals from other libraries. Queens College communicates with Albany by teletype and borrows about 1,800 items a year. Books may also be borrowed by students and faculty from 15 of the 19 libraries of City University through delivery from the lending library via the City University's mail delivery system. These 15 libraries have combined holdings of about 2 million volumes. In addition, through membership in the New York Metropolitan Reference and Research Library Agency, students and faculty can obtain "courtesy cards," which give them access to many libraries in the area for specified periods of time. Advanced graduate students and faculty are given special privileges at the New York Public Library (reduced photocopying rates and delivery of books to a special area of its main reading room). Various union lists have been prepared to facilitate the locating of holdings, notably a list of periodicals owned by City University Libraries (1969) and a computer-produced union list of periodical holdings in five libraries of the Borough of Queens (the latter has been produced every 2 years since 1968 at Queens College).

The library also borrows materials or obtains photocopies from the Biomedical Network of the State University of New York and, through Associate Membership of the university's Graduate Center, from the Center for Research Libraries in Chicago.

Cooperation and Coordination Among the Libraries of City University

Each of the libraries of City University is independent administratively. The chief librarian serves at the pleasure of his or her college president. The Chancellor's Office exercises no direct administrative control over any of the 19 libraries. However, there have been efforts to bring about some kind of coordination. A university dean of libraries was appointed in the Chancellor's Office in 1969 (Richard D. Logsdon, formerly director of libraries, Columbia University), but his office was suspended in mid-1971. Efforts to reactivate the position in 1973 failed. Since 1974 a dean in the Chancellor's Office has been given added duty to serve as liaison officer between the libraries and the Chancellor's Office.

The chief librarians of City University have always maintained personal communication with each other, first informally and occasionally, and since the mid-1940s through regular monthly meetings of a "council." Since 1951, this council has been charged with the responsibility for coordination of the activities of the libraries and the establishment of uniform practices among them.

Officially, the council was recognized by the Administrative Council (of Presidents) of City University and was expected to develop policies for personnel, acquisitions, fines, and wider access of each library to the students and faculty of other City University colleges. However, in the absence of administrative authority over the libraries of City University and of central direction, the council has not been able to go very far beyond making recommendations, passing resolutions, and developing cooperative ventures on a voluntary basis.

Such ventures have covered most, but not all, of the libraries in such areas as open access, interlibrary borrowing, sponsorship of a union list of periodicals, and

exchanges of materials on a modest scale; but, despite numerous proposals, nothing has materialized in the areas of a printed union catalog, cooperative purchasing and binding, centralized cataloging, centrally directed computer applications, etc. Some uniformity has been achieved in the personnel area in such matters as the work week (35 hours), annual leave (30 work days), procedures for performance evaluation, sabbaticals, salary schedules, grievance procedures, and research grants. The council meets eight times a year, usually for 2 hours, and serves as a useful medium for the exchange of information and for face-to-face deliberation and commiseration. The meetings have tended to become a bit formal, with reports from standing committees, adherence to parliamentary procedures, etc.; and representatives of the Chancellor's Office and the Library Association of City University (LACUNY) are in attendance as observers. There is still hope that the libraries can be transformed into a coordinated system under central guidance without central control, but the wide diversity of the libraries and their independence militate against such a development.

Nonprint Instructional Media

At Queens College only some of the nonprint instructional media are handled in the library. They are the media which libraries have traditionally handled, that is, phonorecords and tapes of music, plus listening stations; audiovisual materials used in schools; and slides of art objects. The library also administers a unique collection of over 1,100 art objects, paintings, etc., and has a regular art exhibit program. A separate campus unit, the Center for Instructional Development (which is outside the jurisdiction of the chief librarian), is responsible for motion picture projection and rentals, studio television, videotape production, film making, multimedia presentations, and other activities designed to aid and enrich classroom instruction and learning.

Among librarians, there has been considerable debate as to the proper organizational setup for print and nonprint materials and services, respectively. Within City University, the community college libraries generally have been given responsibility for all audiovisual services, and some libraries have been renamed Instructional Resource Centers. Claims have been made that great advantages are achieved when all resources are administratively together, particularly with regard to easier catalog referral to nonprint media and the facilitation of the use of nonprint in conjunction with the use of the printed word.

In larger libraries, such as that of Queens College, the two types of services seem to enjoy a harmonious coexistence; and friendly collaboration occurs, rather than subordination of one to the other. If more funds were available, a greater degree of cross-fertilization would undoubtedly occur. The two related services may well occupy quarters in the projected new library building even though they may continue to be operated as separate administrative units. The new building is likely to be equipped with the necessary conduits and have study desks at which audiovisual materials can be projected and studied for individual use.

Library Orientation

College libraries have usually paid some attention to the need of students for orientation and instruction in the use of the library. Some college libraries have conducted formal courses for college credit, but the value of such courses has been widely questioned on the ground that students learn best when they have an actual search problem in connection with an assignment in a regular course. Information on reference tools and bibliographies, etc., tends to be forgotten by the time students encounter a research problem.

At Queens College an audiocassette tour is provided for those wishing to learn the rudiments of library use. The idea of formal instruction has been rejected in favor of lectures on specific subject bibliographies, which are presented by librarians in regular classes whenever an instructor or a special group requests such lectures. Over a hundred classroom lectures a year are normally given by members of the reference and reader services staff. In addition, one staff member has devoted his full time to the orientation and library instructional program. He works, for instance, with the instructors in the freshman English Composition course in developing the library portion of a videotape training program on how to prepare a "research" paper. He also prepares numerous booklets on how to use different types of library materials.

Specialized instruction is offered in the use of such newer informational sources as computer-based retrieval tools—for example, ERIC (in education); and opportunities are available for gaining experience with such retrieval tools as Lockheed's DIALOG and MEDLINE, to which students and staff can gain access in other libraries by arrangement. Lecture tours and mini-courses are offered to students from poverty areas who are in need of remedial instruction to help them take full advantage of what the college offers academically.

Summary of Salient Facts

The Library of Queens College has developed slowly and painfully over a 35-year span into a well-functioning integral part of the college. The size of its collection might pass the half-million mark by 1979. The collection is substantial, but duplicate copies are insufficient for the size of the student body (head count, 20,500 in 1977).

Most of the book collection is classified by the Library of Congress system, but one-third of the books are still in the Dewey Decimal classification.

As an institution depending on municipal tax support for 25% (before 1977, 50%) of its income, the library has suffered constant financial uncertainty and instability; job freezes and budget crises have been common occurrences.

The physical facilities have now become quite inadequate. A new building is a necessity and may become a reality by 1985.

The college has changed in character from an elitist institution devoted to a great extent to the training of teachers—and with considerable emphasis on the liberal arts—to an institution increasingly moving in the direction of preprofessional

and professional or job-oriented education. (It currently has about 2,000 majors in accounting, has a library school, expects to start a law school soon, is exploring the feasibility of a medical school, and has notable strengths in the sciences, art, and music.) Enrollment may level off; and more financial support by the State of New York may be in the offing.

The library's greatest strength lies in its good book collection and superior professional staff. Its great handicap is an inadequate clerical and subprofessional support staff. Automation and the linkage to a bibliographic network may help, but not enough to reduce the need for more full-time subprofessional employees.

The library will continue to rely on the cooperation of other libraries for supplying books and other materials that it cannot afford to collect comprehensively itself. Library networks (such as OCLC) and library support agencies (METRO) can be expected to continue to play important roles in supplementing the library capabilities and resources of Queens College.

Selected data on the library are given in Table 1.

Impact of the 1975/76 Fiscal Crisis of New York

The fiscal crisis of New York City and New York State had severe effects on City University. The university budget for 1975/76 was cut at the beginning of the academic year by $87 million (from $684 to $597 million). This situation forced Queens College to reduce its budget correspondingly, by $6.3 million—from $59 million to below $53 million, with an additional cut threatened.

It is sobering to see how the library fared during such an unprecedented disaster. Those who had always believed that the library of a college was sacrosanct were to experience a rude awakening. The notion of the library as the heart of a college proved to be an illusion in the quick reordering of priorities. Highest priority was assigned to the classroom faculty. The teaching faculty was cut by less than 9%, mostly by eliminating part-time teachers; the library staff lost over 21% by eliminating virtually all part-time help for the academic year. The book budget was cut by over 28%; the library was forced to pay all past obligations out of this reduced budget and could incur no new obligations to be carried over into the next fiscal year.

The net effects were: First, the full-time professional staff was left with a full-time clerical staff of about one clerk for each professional; whereas previously the ratio had been 3 to 1. As a result, the surviving librarians had to spend about 40% of their time, on the average, on nonprofessional chores that needed to be done, which had previously been performed by nonprofessionals. To survive, the library had to reduce library hours from 75 a week to 53 (increased later to 57), and it also undertook many other service cuts. Second, the book budget allowed only the renewal of most serial subscriptions and standing orders, plus a small amount for reserve books. There was virtually no money left for new books or binding; whereas normally, over 20,000 volumes would have been acquired. There seemed little hope that this gap would soon be filled. Third, there was an indication that the only way to restore the lost part-time help would be to reduce the professional library staff,

TABLE 1

Selected Facts and Figures on the Queens College Library

	1974/75	1975/76	1976/77
Major holdings			
Volumes	463,297	473,016	486,091
Government documents	240,561	254,295	255,477
Microfilm reels	14,317	15,719	18,692
Periodical titles received	4,465	4,257	4,119
Home circulation (volumes)	377,076	297,490	288,867
Reserve circulation (volumes)	116,422	85,699	66,849
Borrowed from other libraries (items)	2,820	1,693	1,788
Loaned to other libraries (items)	1,607	1,072	875
Personnel			
Librarians	39	39	36
Clerical, full-time	39	40	42
Clerical, part-time (FTE)	76	25	35
Total (FTE)	154	104	113
Financial data			
Professional salaries*	$793,285	$770,140	$764,899
Clerical salaries*	385,809	386,418	442,620
Hourly wages	363,080	60,118	110,852
Books, periodicals, and binding	509,379	365,863	365,000
Supplies and equipment (including automation)	157,772	113,998	97,497
Total	$2,209,325	$1,696,537	$1,780,868
Physical facilities			
Main Building: 91,194 sq. ft.			
Music Library: 5,538 sq. ft.			
Total 96,732 sq. ft.			

* Exclusive of fringe benefits.

thus forcing a further reduction in the quality of professional service and a drastic curtailment of subject-divisional reference service and other library services. Only a part of this loss could be compensated for through increased automation of procedures.

After many years of happy expansion and continuous service enrichment, the library began to undergo abrupt retrenchment, which required a radical shift in management thinking. The way toward a better future could now only come through greater aid from the State of New York and a radical reordering of priorities in the total mission of the college. In this reordering process, the library might be expected to be maintained at a level commensurate with its importance in the instructional aim of the college.

It is hard to say what lessons can be learned from the experience of one of the sharpest retrenchments in higher education in the United States. Libraries seem to be regarded as less important than librarians like to believe. In budget cutting, the rule seems to be that "things" have to go before staff—that is, book budgets are cut first, in disregard of the cost of future repair of the damage done; binding is neglected; building plans are deferred; funds for supplies and equipment are reduced. The staff is cut by letting part-timers go first (mostly due to union pressures), but tenure and civil service commitments tend to be observed. When budget cuts are mandated, maintenance of productivity through a proper ratio of clericals to professionals (3 to 1 or better) becomes a matter of lesser importance than the preservation of full-time jobs. The preservation of jobs seems to take precedence over the proper maintenance and growth of the book collection.

One lesson learned from the experience of retrenchment is that cutting the library of a college more sharply than its teaching staff may inflict permanent damage. Another lesson is that, in order to preserve quality in higher education, it is better to curtail or eliminate low-priority academic programs than to weaken the library.

BIBLIOGRAPHY

Cogan, Lee, *Queens College of the City University of New York: 1937–1962*, Queens College, New York, 1963, pp. 64–65.

"Dedication of the Paul Klapper Library, Queens College, Flushing, N.Y., May 13–14, 1955," 20 pp.

Gelfand, Morris A., "Paul Klapper Library," *Lib. J.*, **80**, 2719–2724 (December 1, 1955).

Gelfand, Morris A., "Report on the Library (1954–1955 to 1964–1965)," prepared for the Committee in Charge of Preparing the College's Report to the Middle States Association (February 28, 1966), 32 pp., dittoed.

Gosnell, Charles F., and Carl E. Stover, "Proposed Library Building for Queens College," *Lib. J.*, **68**, 547–550 (July 1943).

Muller, Robert H., "Library Resources of Queens College: Progress 1964 to 1974 . . . ," prepared for the Committee in Charge of Preparing the College's Report to the Middle States Association (October 22, 1974), 13 pp., typewritten.

Muller, Robert H., "Library Resources and Services of Queens College, 1975," prepared for the Committee in Charge of Preparing the College Report to the Middle States Association (May 1975), 5 pp., typewritten.

Myrick, William J., Jr., *Coordination: Concept or Reality? A Study of Libraries in a University System*, Scarecrow Press, Metuchen, N.J., 1975, pp. 14, 42–43.

"Queens College Master Plan: 1975," prepared for the City University of New York, the City University Construction Fund, the Dormitory Authority of the State of New York, by Morris Ketchum, Jr., and Associates, May 1971.

Information on the library appears on pp. 28, 39, 66, 84, 86, 88, and 90. The plan projected a library complex of 221,000 net sq. ft., to be completed in 1977. The total included the present Paul Klapper Library building of 91,194 sq. ft., which was to be rehabilitated by the end of 1978. The plan called for separate locations for graduate, undergraduate, science, and music libraries.

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RADIO - TV AND THE LIBRARY

Introduction

When the first broadcast of voice by wireless radiotelephone was accomplished—Christmas Eve 1906—it may have seemed a miracle to many (*1*). The broadcast, however, was the result of many years of scientific experimentation and the development of various kinds of apparatus. "Fourteen years were to elapse, however, before the possibilities inherent in Fessenden's experiment [1906] attained the full measure of radio-broadcasting" (*1*). On election night, November 2, 1920, 500–1,000 persons who had earphones heard the Cox–Harding election returns, the first demonstration of a broadcast from the first radio station, KDKA, Pittsburgh (*2*).

This minute beginning in 1920 heralded a mushrooming of station operations and radio receiver sales. By 1950 most communities had radio stations: all communities with a population over 25,000, 85% of communities between 10,000 and 25,000, 52.5% of those between 5,000 and 10,000, and 25% between 2,500 and 5,000 population had one or more stations (*3*)—a total of 2,118 licenses. In 1949, 81,000,000 radio sets were estimated to be in use in the United States (*4*).

The rapid growth over 30 years proved that broadcasting was a profitable venture, and that the securing of a license and the operation of a station constituted a valuable property. Radio's gross billings in 1949 totaled $637,200,000 (*5*).

Prior to 1922, radio was conceived of as a "potent instrumentality for culture and the uplifting of America's mass intelligence" (*6*). The idea that information could be transmitted simultaneously between far-off points was a wonderful one, and the vision of a new march of cultural content was a thrilling forecast indeed to those who commented on this new medium in the 1920s, 1930s, and 1940s. It was apparent quite soon, however, that radio's dependence on commercial support and its need to broadcast on a level which matched—but could not exceed—the popular culture of the day created special demands. Program content had to

be understood by all if it was to be enjoyed by all; and if it was not enjoyed by all, it would not be listened to by many. This limitation (plus the acceptance of the fact that radio as a private enterprise was operated for profit) foretold that the previously idealized concept of radio as a new lever for cultural uplift would not operate easily—if, indeed, it could ever be accomplished. Regardless of listener concerns or apathies, sales of broadcast time grew, and program content stayed at a common denominator level, predetermined by advertising agencies, which appeared to guarantee greater and greater returns as the medium grew (*6*).

Education as a factor in the value of radio content had been a concern since the start of broadcasting. But the ability of educational organizations to obtain, operate, and especially to maintain broadcast facilities was very weak in comparison with commercial interests. Two hundred "educational licenses" were issued between 1921 and 1936; and during the same period, 154 either were abandoned or were transferred to private hands and/or commercial interests (*7*). The social promise and theoretical educational value of radio did not materialize during the decades of its heyday; and as television began to replace radio in the hearts (if not the minds) of the American public, the ideal was shattered into occasional bits of unusual and meritorious programming.

Modern television broadcasting (or telecasting) began in 1923 when Dr. V. K. Zworykin, of RCA Laboratories, filed a patent application for his invention of the iconoscope (*8*). This device, the eye of the television camera, made it possible within a few years to demonstrate the transmission of pictures instantaneously between points far apart in space. In 1939 television was given a public demonstration at the New York World's Fair. Soon after this event, telecasts of sports events and other public activities brought the medium directly to the public. In 1941 the Federal Communications Commission set July 1 of that year as the date on which TV stations could begin commercial broadcasting (*9*).

After the war this new phase of commercial communications sprang into life. One million TV receivers had been sold by Christmas 1948 (valued at $353,000,000) in only 23 states. From 7 stations in 1946, to 92 stations in 1949 (*10*), to more than 600 by 1970—this is too simple a statement to make about the phenomenal growth of television as a broadcast medium in this country. In less than 40 years a single medium displaced all previous and concurrent means of entertaining and informing the American public at home, in industry, in school, and at play.

During the 1930s, radio made inroads into education and also reinforced its role as a prime source of information and entertainment, and the medium solidified its position as a growing major force in American life. While few radio stations in the 1930s, and indeed in the 1940s, were operated solely for educational services, a growing number of educational institutions utilized a variety of broadcast programs. In the 1920s, for example, Walter Damrosch organized and presented the "Young People's Concerts" and the "Music Appreciation Hour," programs which were heard and used in schools in large numbers. Other notable programs of the period were: "Singing Today," "American School on the Air," "Let's Pretend," "Lady Next Door," "Uncle Don," and others. These programs helped many teachers and some librarians foster a concept of the educational values of radio, and the content was used in a variety of ways in both school and library activities.

Parents, community leaders, school authorities, and librarians helped keep such programs alive and vigorous for a decade or more. They helped both to bridge the gap created by the dire years of the Depression and to maintain a continuity of programming for specific age groups and educational utilization.

The Great Depression of 1929 made it apparent that Americans needed both entertainment and information broadcasts. While thousands of depression-caught workers were forced into personal bankruptcy—which included the sale (or repossession) of household items such as refrigerators and radios—other thousands turned to broadcasts for relief from daily woes. Many programs of the 1930s were those whose stars—e.g., Jack Benny, Bob Hope, Red Skelton—remained popular for more than two decades, and whose beginnings in the depression years and pre-World War II days signaled the solid acceptance of radio as a common denominator in American culture. It should be noted that, while radio began to reach millions of Americans in the 1930s, television was also being experimented with in those years as a new form of broadcast communication.

Radio and Library Services

The first reports on library use of radio appeared in *Library Literature, 1921–32. Publishers Weekly* magazine presented articles in 1922, 1923, and 1924 on copyright and broadcasting, on reviewing books by radio, and on the broadcasting of book content (*11*). The American Library Association (ALA) had recognized radio's potential for and actual use in library services as far back as 1927. The first ALA committee concerned with radio was formed in that year; its title was Library Radio Broadcasting (*12*).

In the 1930s and 1940s, *Library Literature* gave evidence of considerable interest in radio utilization in a variety of types of libraries. During the 1930s libraries experimented with radio utilization as a means, basically, of making the library better known in its community. Public libraries, therefore, were the major "users," in the sense of publicizing commercial broadcasts or in the production of simple book and service information programs; as the decade advanced, a few college libraries became involved in limited radio programming.

The book *Library on the Air* (*13*), published in 1940 but referring to activities in the late 1930s, was the first volume devoted to library programming via radio. This publication gave simple scripts of the programs aired, by age level and by subject; the scripts were collected from a variety of libraries which had replied to the author's questionnaire on the uses of radio. Those libraries which responded to the questionnaire were almost exclusively public libraries. However, one college library provided information through radio broadcasts to farm and rural women, a special library was emphasized in a broadcast sponsored by the Special Libraries Association, and school/public library relationships were highlighted in a script received from a county library.

An article written in September 1940 portrayed the school library as having a variety of functions related to its role in the utilization of radio in the school's program: a publicity agent for radio activity, a materials bureau, a transcription

and script library, a broadcasting center, and a listening center (*14*). Citations about radio use in *Library Literature, 1940–42* included an article which exhorted readers to be ready for television (when it became available) by reviewing the kinds and numbers of services which might be performed with the aid of television programs (*15*). Thus, in the earliest war years, sufficient development of, and interest in, this newest medium was already referred to in the only professional citation service for libraries.

In the 1943–45 volume of *Library Literature*, typical articles on radio use appeared, with emphases on wartime constraints and special needs. Such uses were, again, book reviews, book information, and notes about library services. In this volume, also, three articles were listed under the heading Television, which appeared for the first time. Throughout this decade, libraries increased their radio activities. ALA's annual meetings, as well as the Midwinter Sessions, provided continuing opportunities for the exchange for information about programs, which by then included a broad range of library services, by age level and by subject area. Committees on radio utilization met regularly, at state association functions as well as at national meetings; and television utilization (by the middle and into the end of the 1940s) received increasing attention by librarians.

In 1948 a survey of 244 public libraries was conducted to check the attitude of librarians toward radio as part of library public relations programs. Most of the reporting libraries by this date had 1–15 minutes per week of broadcast material, mainly book reviews from scripts prepared by staff members. The respondents generally agreed that the chief advantage of radio publicity was the opportunity to sell the library to its community. Scripts used were considered by the author to be quite elementary, and they were usually focused on the reader/user portion of the audience rather than on nonusers. Radio was used mostly to amuse listeners, rather than to inform or enlighten them (*16*).

The Louisville (Kentucky) Public Library's utilization of radio and television was described in a UNESCO publication in 1951 (*17*). This library was a pioneer in accepting responsibility for both the production of broadcasts and the utilization of the best available programs through recording devices. It operated the first station licensed to a public library in this country.

In 1950 a master's thesis on 20 years' use of radio as a publicity medium was published (*18*). Some 50 pages of program notes indicated the range and size of library involvement from radio's earliest days to the war years.

Television and Library Services

By 1950 television's rapid growth was evident: it had spread from its beginnings on the East Coast, to the Midwest, and on to the Pacific Coast. Quickly evident, also, was librarianship's awareness of this new medium's potential use for library services and their development. In 1951 a survey, perhaps the first one dealing with this potential, was described in two articles. Sixty-two of sixty-eight libraries returned questionnaires which indicated that television had already caused some decreases in library circulation; but television was not held to be the only factor in declining

use. Fewer recreational materials were circulated compared to other subjects and information areas, after television viewing was established in an area. The study concluded that television would be useful for library services, and that the medium would be a potent force, felt "throughout the warp and woof of American life" (*19*).

As television spread across the country, and as the number of sets increased (reaching 19.8 million in 1952, and 46.2 million in 1960, Ref. *20*), increased attention in the literature (via the index *Library Literature*) indicated equally increased utilization by libraries. For example, the Iowa State University at Ames operated WOI–TV; it had received the last license for a "television" station before the FCC freeze of 1948. The University Library had considerable involvement in programming for this station, and it used the facility for library orientation and other TV-related programming (*21*).

More articles appeared about TV use than radio use in the 1950s, as reported by *Library Literature*, giving evidence that librarianship had turned to the newer medium for exploration and involvement. In 1953 a preconference was held prior to the ALA annual meeting in Los Angeles. This session dealt with programming concepts, library/TV relationships, and other aspects of increased library utilization of television offerings. The enthusiasm engendered by this conference lasted only a few years, however. While 62 citations are recorded in *Library Literature, 1955–57*, most of these references do not highlight innovations or indicate strong new directions for library/television relationships.

As the decade progressed, library involvements with television centered around the ability of the library—public, school, and academic—to utilize commercial programs, while the library profession debated its role in supporting educational groups and organizations. Little evidence is available in the literature that librarianship took an active part in supporting educational stations except in a few major cities. Many public libraries, in cities with several television facilities, were able to promote "on air" programming of considerable value and interest to the agency and the community. In the late 1950s and early 1960s, many large libraries sought and hired personnel whose experiences in public relations programming included broadcast media activities, or who were interested in furthering library use of the new medium. Smaller libraries, however, were not nearly so able to join the ranks of library TV users, and such agencies had to depend for their involvement on the willingness of commercial personnel to assist librarians as a community service.

A gift of videotape recorders to educational television stations in the early 1960s helped make it possible for libraries to have aired a variety of television programs with content which normally would not have been available in many communities: productions by major groups for education, which were loaned for telecasting to this group of stations; local productions hitherto not available; and special commercial telecasts (supported by various bodies) which had valuable educational content. However, the videotape recording was essentially useless to libraries, compared to the kinescope (16-mm film recording), which had appeared in the 1950s. Until the appearance of videotape recorders using tape sizes smaller than the 2-inch commercial standard, most libraries were unable to take advantage of the growing library of videotape programs. The availability of ½-, ¾-, and 1-inch videotape recorders and playbacks in the 1960s and 1970s provided a relatively inexpensive

means for even small libraries to obtain and use many excellent and well-focused television programs, which were available from tape libraries in commercial and educational facilities.

During the late 1950s and into the 1960s, increasing attention was paid to children's TV programs, through both commercial channels and educational sources. Increased concern over the effects of television-watching on children of all ages, and among teen-agers, led to investigations of the role of television in the life and activities of children (*22,23*). Knowledge that the young spend thousands of hours viewing TV during their formative years led to the development of special content for children's programs (both preschool and in school-age groups), such as "Sesame Street," "Electric Company," "Mr. Wizard," and others.

Library utilization of such programs (however many hours might be spent viewing at home) varied from limited announcements about programs, to discussion groups, in-library viewing, and librarian involvement in community studies of television (TV and violence, TV and obscenity, TV use, etc.). Increasing use in school media centers of television materials, including increased viewing opportunities, led more librarians to concern themselves with implementing a variety of television offerings, and with efforts to widen the role of TV utilization by libraries.

By the latter half of the 1960s, many educational institutions had experimented with and had established closed-circuit television instructional activities. These included library orientation and library use "courses"; special educational activities (e.g., lecturing via videotape to large groups of students); two-way voice facilities to provide feedback; and remote telecasts for instruction in medicine, sciences, social work, etc. These activities were not evidences of a major thrust by either faculties or librarians, however, even in the heyday of television concerns in this decade.

By the late 1960s, and into the early 1970s, cable television (community antenna TV, or CATV) operations were increasingly important in the commercial field, and the interest spilled over into education and librarianship. Several conferences were conducted to acquaint librarians with the operations, potentials, and problems of CATV, and the profession was strongly urged to seek channels and to request full consideration in the establishment of these networks and the awards of franchises for their operation (*24*).

A major concern of librarians relates to copyright, and an important element in the copyright domain (and in the revision of the Copyright Act) is the licensing and role of CATV enterprises. Future programming by libraries which might make use of such networks will require constant interaction and cooperative planning to obtain the benefits of CATV operations. Final action in, and interpretation of, the new Copyright Act passed in the closing hours of the Eighty-fourth Congress (October 1976) will shape the interactions and effects of CATV on libraries of all types in the next decade.

Conclusion

In retrospect, more than 50 years of radio broadcasting and 25 years of telecasting have shown that libraries—mainly public and school—have utilized these

media in many ways, albeit in uncomplex and derivative fashion. A large variety of programs have been aired for listening and viewing; but libraries and librarians have not effected major changes in library objectives and services as a result of these newer forms of communication. As networks develop and as libraries become more closely intertwined in their activities, perhaps broadcast services will result which will utilize material resources and human skills more fully and in more innovative aspects than in the present era of mass communication.

REFERENCES

1. Charles F. Lindsley, *Radio and Television Communication*, McGraw-Hill, New York, 1952, p. 13.
2. Ref. *1*, p. 15.
3. Ref. *1*, p. 33.
4. Ref. *1*, p. 40.
5. Ref. *1*, p. 44.
6. Ref. *1*, p. 76.
7. Ref. *1*, pp. 84–88.
8. Ref. *1*, p. 325.
9. Ref. *1*, p. 326.
10. Ref. *1*, p. 327.
11. *Library Literature, 1921–1932*, ALA, Chicago, 1934, p. 299.
12. *Bulletin of the A.L.A.; ALA Handbook, 1927*, ALA, Chicago, 1927, p. 509.
13. Marie D. Loizeaux, comp., *Library on the Air*, H. W. Wilson, New York, 1940, 364 pp.
14. Willard M. Heaps, "Ears and the Library . . . ," *Wilson Lib. Bull.*, **15**(1), 19–23 (September 1940).
15. "The Mail Bag: Television in the Library," *Wilson Lib. Bull.*, **15**(1), 82–83 (September 1940).
16. Samuel F. Lewis, "Library Radio Publicity," *ALA Bull.*, **42**(2), 63–66 (February 1948).
17. Clarence R. Graham and W. Hodapp, "Radio and Television in Adult Education Programs of the Louisville Free Public Library," in *Libraries in Adult and Fundamental Education* (Cyril O. Houle, ed.), sponsored by UNESCO, Columbia Univ. Press, New York, 1951, pp. 76–82.
18. M. L. Duff, "Radio as a Medium of Library Publicity: A Description of Various Programs, 1921–42," M.S.L.S. thesis, Cleveland Reserve University, 1950, 50 pp.
19. Russel R. Voorhees, "What Is TV Doing to Public Libraries?" *Lib. J.*, **76**, 576– (April 1, 1951); ibid., 671–676 (April 15, 1951).
20. *Statistical Abstract of the United States, 1973*, 94th ed., U.S. Department of Commerce, Bureau of the Census, Washington, D.C., 1973, p. 693.
21. Robert W. Orr, "Television and the Library at Iowa State," *College Research Lib.*, **13**(4), 314–318 (October 1952).
22. Hilde T. Himmelweit, *Television and the Child . . .*, Oxford Univ. Press, London, 1958, 52 pp.
23. Wilbur L. Schramm, Jack Lyle, and Edwin B. Parker, *Television in the Lives of Our Children*, Stanford Univ. Press, Stanford, Calif., 1961, 324 pp.
24. Cf. Brigitte L. Kenney, "Cable Television for Librarians," *Drexel Lib. Quart.*, (January–April 1973).

HAROLD GOLDSTEIN

RANGANATHAN, SHIYALI RAMAMRITA

Ranganathan (1892–1972) was born in Shiyali in the Tanjavoor District of Madras State (now known as Tamil Nadu) on August 9, 1892. He was the first child of his parents and the first grandchild of his grandparents, both paternal and maternal. His father, Ramamritha Ayyar, belonged to the village of Ubhayavedanthapuram in the Nannilam Taluk of Tanjavoor District. He was a landlord holding a medium-sized landed property, a wet-land growing paddy for rice, the principal food crop of the fertile Cauvery Delta. He was a cultured man who often gave expositions on *Ramayana* to small audiences. He was held in high regard by the people of the neighborhood and by visiting officials. Seethalakshmi, the mother, was a simple and pious lady. The parents had three sons and a daughter.

Ranganathan's Education and Professional Career

EDUCATION

Ranganathan's education started in a traditional manner on a Vijayadasami day in October 1897 with *Aksharabhyasam* ("alphabet learning"). He started his edu-

Ranganathan

cation in a small school at Shiyali. Within a year Ramamritha Ayyar fell ill and died at the early age of 30, in 1898. Ranganathan's mother, Seethalakshmi, survived her husband by nearly 62 years. Thus, Ranganathan's childhood was influenced by his maternal grandfather, Subba Ayyar, who was a primary schoolteacher.

During his school days Ranganathan was particularly influenced by two of his teachers, who had a great part in molding his mind: R. Anantharama Ayyar, nursery teacher, and Thiruvenkatachariar, Sanskrit teacher. The former was a Saivaite and used to tell the adventures of the *Saivaite bhakthas*, such as Sambandar, Appar, Sundarar, and Manickavachakar. The latter supplemented the lore with his knowledge of Vaishnavite saints such as Ramanujacharya and Vedanta Desikar. These early imprints on Ranganathan stood him in good stead throughout his career, and his writings abound with analogies from Hindu sacred works.

Ranganathan was a bright student throughout the school course in the S. M. Hindu High School, Shiyali, and passed the Matriculation Examination in the first class in 1908. Ranganathan was sickly, however, suffering from piles and anaemia from 1907 to 1909. He could not sit up and read, but one of his classmates (who was a co-tenant) read aloud to him and Ranganathan wrote the examination from memory. Ranganathan came in contact with the headmaster, Mr. P. A. Subramanya Ayyar, who later succeeded Right Honorable V. S. Srinivasa Sastri in the headmastership of the Hindu High School (Triplicane), Madras. The contact flowered into greater intimacy later when both of them lived in the same locality in Madras. Subramanya Ayyar kept Ranganathan informed on the thoughts of mystics like Sri Aurobindo.

COLLEGE CAREER

Ranganathan joined Junior Intermediate College in Madras Christian College in March 1909. Even in those days, with a smaller population, the college seats appeared to be difficult to secure. Shy and diffident due to being new to the metropolis, Ranganathan had pinned his hope on good luck and his distinction in the Matriculation Examination. He told us later how Dr. Skinner, the principal of the college, spotted him in the crowd waiting for admission and gave him an admission card—probably the very last one.

Ranganathan passed through the Intermediate College with a good first-class standing and later completed the B.A. degree, also in the first class. In June 1913 he joined the M.A. class (mathematics) as the only student of Professor Edward B. Ross. Here began a lifelong contact between the two men. Ranganathan completed his M.A. in 1916, and his college intended to absorb him on its teaching staff. Ranganathan loved teaching and joined the Teachers College for an L.T. degree. His love for teaching brought him into close contact with a few renowned professors: Professors Moffat and J. P. Manickam of physics; Professor Sabhesan of botany; and Professors E. B. Ross, Chinnathambi Pillai, and L. N. Subramanyan of mathematics.

Ranganathan started his teaching career in 1917 at the Government College, Mangalore; and he worked at the Government College, Coimbatore, before he

joined the Presidency College on July 7, 1921. In these colleges Ranganathan taught physics and mathematics.

Ranganathan introduced novel experiments in teaching. Despite the large number of students in each class he aimed at giving individual attention to the students and grouped them into teams. He encouraged the use of books by the students, thus avoiding the prevalent highly teacher-centered and notes/dictation classroom methods. Later he called his approach library-centered teaching. Here we see the seedling for the future blossoming of librarianship in India! One of his colleagues at the Presidency College has testified to the students' involvement in the discussion mode of teaching and learning in Ranganathan's class. Even in later days, Ranganathan's students—who distinguished themselves in Indian Civil Service and other professional services—often referred to his class as a factor in the stimulation of their thinking capacity. They called him a "born teacher."

Ranganathan was also active in extracurricular activities. From 1921 to 1923 he was secretary of the Mathematics and Science Section of the Madras Teachers' Guild. He roused public awareness by public lectures. He introduced some uniformity and standardization in compiling the question papers for various examinations. He obtained pension facilities for private-school teachers through his writings in journals, and he made suggestions for improving the Provident Fund Scheme for teachers. He augmented the finances of the Indian Mathematical Society. He was a very popular figure in the mathematical circles and was regarded as an efficient organizer of meetings, etc. His friends have quoted Ranganathan's statements about his attitude to work, thus: "Our right is only to do the work falling to our share, never to the fruits of our work. Flirt not with fruits."

TOWARD LIBRARIANSHIP

Ranganathan left Presidency College in January 1924 to take an appointment as the first librarian of Madras University. It was natural for Ranganathan—who was a lively teacher and had had thrilling intellectual experiences with students and faculties of Presidency College—not to opt for the post of librarian, even though it carried a handsome salary. Ranganathan quite often narrated to us that he never wished to be a librarian. He said that Providence made him one. An accidental meeting with a secretary of the Madras Provincial Government, along with an old colleague, triggered the movement toward librarianship. Ranganathan's colleague practically forced him to apply for the post of university librarian; and in spite of his diffidence and lack of interest, his colleagues and superiors—being keen on using his innate abilities—saw to his appointment as librarian of Madras University. He took charge of the University Library at 4:00 P.M. on Thursday, January 4, 1924—but, Ranganathan was back within a week at Presidency College to plead with the principal: "I have come with a specific request. I can't bear that solitary imprisonment day after day. No human being, except the staff. How different from the life in the college!" The principal, Mr. Duncan, had to pacify him by saying: "If you feel bored even after you return from England, I shall certainly take you. I shall see that your place in the College is not permanently filled up till you come back from your travel and training abroad" (*Herald Lib. Science*, **2**, 130, 1963).

Ranganathan left for England in September 1924 and returned in July 1925, after 9 months of study-cum-observation. In England, Ranganathan came in close contact with W. C. Berwick Sayers, chief librarian of Croydon Public Library and lecturer in the University School of Librarianship, London. Under his guidance Ranganathan visited a large number of libraries. He witnessed there how libraries had become community reading centers. He also found how the libraries rendered service to all strata of the society: to children, to the working class, and to women, besides other groups. This made a lasting impression on his mind; it considerably changed his outlook and he discovered a social mission for his life. The impact of these experiences was expressively stated in 1931 by Sir P. S. Sivaswamy Aiyar, one of the enlightened statesmen of Madras at that time:

> He has brought to his task extensive knowledge of literature on the subject of libraries, personal acquaintance with the methods of management of libraries in Britain, a trained analytical intellect and a fervid but enlightened enthusiasm for the library movement. He has been the pioneer of the library movement in the Madras Presidency and has been carrying on an energetic propaganda to spread it. He knows how to rouse and sustain the interest of the reader (*Five Laws of Library Science*, p. xxii).

MADRAS

When he returned to Madras, Ranganathan had to reorganize the University Library. His first concern was to attract more readers to the library and provide facilities for them. He took it upon himself to educate the public on the benefits of reading to one's society and to oneself. He charged the library with a mission of self-education for everyone. He used mass media and personal acquaintances to make the library hum with activity, and the University Library soon acquired a niche in the world of the enlightened public of Madras. The government of Madras took a keen interest in this and provided a handsome annual grant on a statutory basis.

Within the library, Ranganathan initiated behind-the-scene work in several aspects of the library ab initio. Here emerged the Five Laws of Library Science, the Colon Classification, the Classified Catalog Code, and the Principles of Library Management. Active reference service in the form of bibliography and personalized reference service began to blossom. He experimented with open access with great care and zeal; this gave each visitor a new environment in which he himself could select his documents from the library without having to wait for someone to understand his problem and pick up the documents for him. Ranganathan also designed the very functional University Library building, constructed in a picturesque place; and the provisions made for the growth of the library proved adequate for nearly 40 years. All these changes did not happen in a piecemeal fashion, but in an integrated and holistic manner inspired by his Five Laws of Library Science:

1. Books are for use
2. Every reader, his book
3. Every book, its reader
4. Save the time of the reader
5. A library is a growing organism

Outside the library, Ranganathan launched an endless and eternal mission. He gathered the enlightened persons of the area and formed the Madras Library Association, which became the living symbol of the library movement. Ranganathan worked as founder-secretary from 1928 until he left Madras in 1945. He pushed the library movement into the far corners of the Madras Presidency, which at that time covered almost two-thirds of South India. Looking at his efforts today, after nearly half a century, we see that the public library network is quite widespread in South India. The seed sown by Ranganathan has been cultivated for nearly 50 years, and it is currently yielding fruits.

A school of library science was also initiated by Ranganathan in 1929, first under the auspices of the Madras Library Association and later taken over by Madras University. Ranganathan was the director of this school for nearly 15 years. Later (1957), during the Centenary Celebrations of the university, he donated his life's savings of one lakh of rupees to the university to endow a chair known as Sarada Ranganathan Professorship for Library Science. The students of this school have taken leading parts at all levels of activity—local, regional, national, and international.

BANARAS

In 1945 Ranganathan voluntarily retired from the post of librarian of Madras University. He planned to do active research on his own; but soon he received two invitations, one from Sir Maurice Gwyer, vice-chancellor, Delhi University, and the other from Sir S. Radhakrishnan, vice-chancellor of Banaras Hindu University (BHU). Ranganathan first thought of going to Delhi, but on the insistence of Dr. Radhakrishnan, he accepted the invitation to work in Banaras. He found that the BHU Library was not well organized, and that its collection (although large) was not carefully selected and acquired. It had many donated books. Ranganathan classified and cataloged the collection of 100,000 books with a missionary zeal. He also conducted the Diploma Course in Library Science during the years 1945–1947.

MOVE TO DELHI

In 1947 Sir Maurice Gwyer renewed the invitation to come to Delhi University. Ranganathan accepted on the condition that he should not be burdened with administration, but allowed to teach and conduct research. Sir Gwyer gave him every facility. Professor S. Das Gupta, one of Ranganathan's brilliant students, became the librarian of Delhi University. Ranganathan concentrated mostly on training and research. He started Diploma of Library Science and Master of Library Science courses in 1948, probably the first master's degree course in librarianship in the whole of the Commonwealth countries.

Ranganathan organized Study Circle meetings and Research Circle meetings. The Research Circle met every Sunday at his residence. Many new ideas and innovations began to emerge. Team research began to flower.

In 1948 Ranganathan was elected president of the Indian Library Association

(ILA) and Mr. S. Das Gupta was elected as the secretary. The ILA began to evolve its personality in national library science. A confluence of three periodicals—*Annals, Bulletin, Granthalaya*—was founded as an organ of ILA. The acronym ABGILA was given to this composite, three-in-one periodical. The *Annals* contained research papers of the Delhi Research Circle and soon gained international acclaim. The ILA conferences were oriented more toward problem solving than to descriptive presentations.

Ranganathan was drawn into international activity in the field of library and information sciences in 1948; the initiator was none other than Dr. Donker-Duyvis, a dynamic secretary-general of the Federation for International Documentation (FID). Their friendship grew along with the activities of FID. Ranganathan was placed in charge of promoting research in classification at the international level. He was designated rapporteur-general of FID/CA (Committee on Classification Research), through which he published 12 research reports. Later (1962) he became the honorary chairman of FID/CR, which published several reports; and he was one of the chief contributors to FID/CR activities until his death in 1972.

While he was in Delhi, Ranganathan drafted a comprehensive 30-year plan for the development of a library system for India as a whole: He was intimately involved in the following projects:

1. In 1947, the establishment of the Documentation Committee of the Indian Standards Institution (ISI), for which he was the chairman for nearly 20 years (1947–1967). He established several innovative standards and also created a forum for discussion in the annual ISI conventions.
2. In 1952, the founding of INSDOC (Indian National Scientific Documentation Centre), which did pioneering work in promoting information consciousness among R&D personnel in India and is now developing an infrastructure for a variety of data bases needed for information services at the national level.
3. In 1950, the establishment of the Delhi Public Library (UNESCO Pilot Project now run by the Ministry of Education, Government of India), which actually demonstrated its utility by satisfying the book hunger among the people of Delhi, in both urban and rural areas.

Besides these achievements Ranganathan promoted enactment of the Madras Public Library Act (1948), which was the first legislation for a public library system in India and has since been expanded to almost all the South Indian States. In 1948 he toured the United Kingdom at the invitation of the British Council and lectured at many library schools, and he triggered the spirit of some kindred souls to found the Classification Research Group (London). In 1950 Ranganathan toured widely in the United States at the invitation of the Rockefeller Foundation and visited a number of industrial information centers. He also wrote an exposition: "Classification and Communication."

ZURICH

Until 1954, Ranganathan stayed at Delhi. Apart from the Library School and Library Association, he founded other new institutions which have grown into great national organizations. He was keen on going deeply into his techniques and wanted

to observe the information awareness and consciousness in advanced society; and he therefore moved to Zurich, where he could have the solitude so much needed for continuation of this work. There, his magnum opus, *Prolegomena to Library Classification*, was chiselled into a treatise on classification, which critics found to be of far-reaching impact. Besides active participation in, and meaningful contribution to, several international committees and conferences and visits to several European schools of library science, he regularly contributed to *Annals of Library Science*. He stayed in Zurich until 1957.

BANGALORE

Ranganathan left Zurich for Bangalore at the insistence of several eminent scientists and administrators, chief among them being Professor P. C. Mahalanobis (the founder-director of the Indian Statistical Institute and adviser to the National Planning Commission of India until his death in 1972). Ranganathan moved to Bangalore in 1957. He wanted to maintain his solitude—but soon librarians in and around Bangalore City began to gather round him for guidance and research. Ranganathan enjoyed working with young librarians. He often expounded the fundamental aspects of the problems in library service and inculcated curiosity and inquiry in the minds of young librarians. Several good technical research papers evolved in these surroundings. The Planning Commission of India, the Indian Standards Institution, INSDOC, Vikram University, and the University Grants Commission opted for Ranganathan's expertise; he wholeheartedly responded and prepared excellent reports for the development of library and information services. He also conducted informal classes at Delhi attended by senior documentalists and librarians.

The pinnacle of Ranganathan's activity at Bangalore, nay, of his entire life, was in the founding of the Documentation Research and Training Centre under the auspices of the Indian Statistical Institute. The main functions of this center are focused around research and teaching in library and information science. Ranganathan was the honorary professor and head of the center for nearly 5 years. He directed the institution with great efficiency and created an atmosphere of academic excellence, and instilled creative spirit all around. Many foreign visitors who visited the center were struck by the simplicity of the environment and called it an *ashram* or a *Gurukula*. In 1965 the Government of India honored Ranganathan with its foremost distinction in research, namely, the National Research Professorship in Library Science. This was also an honor for library science and librarianship: at that time there were four other National Research Professorships, namely, in physics (Dr. C. V. Raman and Dr. S. N. Bose), in law (Dr. P. V. Kane), in literature and linguistics (Dr. S. K. Chatterjee). Earlier Ranganathan had been honored by Delhi University (in 1948), which awarded him a Doctor of Letters degree (Honouris causa), along with such eminent persons as Jawaharlal Nehru and Sir K. S. Krishnan. In 1964 the University of Pittsburgh conferred a Doctor of Letters on him along with Wiener, Shannon, and Mumford. Ranganathan took all these honors in his usual stride, and he wrote back to many friends in his own hand, using

open postcards. His attitude was thus: "God has chosen me as an instrument: the honour done to me, should act as an incentive to the younger generation to devote their lives wholeheartedly to Library Science and Service."

Most of his salary as National Research Professor in Library Science and the royalties on his books were donated to the Sarada Ranganathan Endowment for Library Science (founded in 1961).

Ranganathan worked with ever-greater zeal and creativity, developing his own ideas, writing and rewriting books and research papers, drafting public library bills, and promoting and contributing to national and international activities. During the last few years of his life Ranganathan abstained from traveling and (almost confined to his own house) devoted himself to deep thinking and study. He allowed very few persons to have contact with him and developed and recorded many of his thoughts. It was in one of his inspired sittings that he conceived the "Absolute Syntax" for indexing language, which he presented in a taped lecture at a symposium at the University of Maryland (1966). He projected his thoughts through the publication *Library Science with a Slant to Documentation* (1964–), of which he was the editor. He also developed the *Prolegomena to Library Classification* (3rd ed.); *Documentation (Its Genesis and Evolution); Physical Bibliography: A Social Bibliography for Librarians; New Education and School Library;* and *Cataloguing Practice.* Some of these works were published posthumously. Ranganathan was working most of the time at the planning level to develop the seventh edition of the Colon Classification. His desire was to achieve the most modern classification scheme possible and his research was incessant and ever-growing. Thus, he proved (like Dewey) that the design and development of classification schemes must be a lifelong mission.

He remolded many of his thoughts to changing contexts. He was quick to grasp the modern concepts and incorporated them in his writings and teachings. He lived frugally and had saved a large part of his earnings for the establishment of the Sarada Ranganathan Chair in Library Science at the University of Madras (1956) and the Sarada Ranganathan Endowment for Library Science (1961), with the main objective of providing forums for continuing research in the field.

During his last 5 years Ranganathan's health deteriorated steadily. He used to say to his inner circle of colleagues: "My body is non-cooperative and decaying but my mind and spirit are young and refreshing." He died on September 27, 1972. Until the end, Ranganathan worked incessantly, putting his heart and soul into library science and the library profession. Numerous were the beneficiaries of this fountain of sympathy, knowledge, creativity, and spirituality. He shared his gifts without any discrimination, with one and all. His life was a symbol of immortality.

Ranganathan's Contribution to Library Science

India's contribution to library science began to blossom in 1925 when Ranganathan started pursuing research in this field. Prior to that, librarianship had been looked upon as a craft full of clerical operations and housekeeping for a collection

of books and other kindred materials. Ranganathan changed the scene first by engaging himself in solo research, during the first 25 years, and then by organizing team research in the next 25 years of his life. The highlights of his contributions are indicated in the succeeding paragraphs of this article, and a chronological summary of his work and achievements is presented in the Appendix.

FIVE LAWS OF LIBRARY SCIENCE

Perhaps the most far-reaching effect of Ranganathan's contribution flows from his formulation of the Five Laws of Library Science, viz., Books are for use; Every reader, his book; Every book, its reader; Save the time of the reader; and A library is a growing organism.

The exciting cause for the formulation of these laws, as Ranganathan himself explained, was the unusual experience he gained while visiting more than a hundred libraries that were at varying stages of development—in their techniques, services, and in building and equipment—in the United Kingdom. There was no common point of emergence of the new trends in different library practices. All development appeared to be a matter of trial and error, and severely empirical. Ranganathan's scientific approach could not be reconciled to this state of affairs, and it led him to think deeply and search for a common root. The result was the formulation of the Five Laws of Library Science. Ranganathan expressed his struggle in the following words:

> Prior experience in scientific study and pursuit induced in me a sense of revolt against having to hold in memory and deal with myriads of unrelated pieces of information and practices. Cannot all these empirical aggregates of information and practices be reduced to a handful of basic principles? Cannot the process of induction be applied in this case? Cannot all the known practices be got by the process of deduction from the basic principles? Do not the basic principles contain, as necessary implications, many other practices not current or known at present? Will they not become necessary as and when the boundary conditions set by society change? Such questions began to simmer in the mind. . . . What are the normative principles pointed to by the observed trends in library practices in UK and pointing to the future trends now not quite visible? This was agitating my mind from the first half of 1925. The pressure of organising the Madras University Library pushed this question into deeper and deeper levels of my mind. This went on for three years. The acute stage of emergence to the conscious level was reached late in 1928. It was late one evening. The pressure was reversed in direction. All other tasks had to be laid aside. The travail was bearable. . . . At about dusk, Prof. Edward B. Ross made his usual daily call on me. . . . I shared my struggle with him. He was about to get on his motorcycle. His eyes gleamed—always a sign of his hitting something new; then came his characteristic smile of such occasions; he said "You mean 'Books are for use'; you mean that is your first law." He went away without waiting even to see my reaction; this was quite like him. But this stroke of intuition of his landed me in perfect relief. The enunciation of other laws was automatic. About three more hours were spent in filling up five sheets of paper with deductions from the five laws (*1*).

Thus, the Five Laws emerged to the conscious level.

The Five Laws were announced and their implications were expounded in a general way at the South India Teachers' Conference, attended by some 1,000 delegates. As a follow-up measure, a course of five lectures was delivered to a small and intimate circle of librarians during the Conference Week. Here, many modern library practices—such as open access, classified arrangement, classified cataloging, reference service, and the ticket system of lending books—were derived from the Five Laws. These were all new to the audience as they had had no opportunity until then to experience library services, due to the absence of libraries.

The founding of a School of Library Science at Madras (1929) helped Ranganathan to derive the deduced principles from the Five Laws. Thus it was shown that the Five Laws comprehended the implication of all the diverse rule-of-thumb practices prevalent up to their formulation. They have also provided definite means of meeting new situations created by social changes. Thus, the new implications of library service—the intensification and the growth of the variety of information services that are needed in the changing social contexts, and the giving way of the theoretical framework of library science to a more general framework of information science—these can easily be derived from the Five Laws by changing the two basic parameters: "book" to "information," and "reader" to "user."

Berwick Sayers has remarked that the Five Laws are a "work of simplicity which conceals depth and yet reveals what may be called the spiritual but intensely practical springs of his [Ranganathan's] activity" (*2*). B. I. Palmer said that the laws were "succinct statements of reasons of our profession" (*3*). D. W. Langridge has stated: "In this book [*The Five Laws of Library Science*] the profession was given for the first time a set of fundamental laws to which all problems may be related. . . . Whether they are adequate and sufficient is not, of course, the point. The point is that they have shown the way and it is up to the profession as a whole to examine their validity" (*4*).

Ranganathan himself described the impact of the Five Laws on his later works. He said:

> The integral quality of the entire domain, with the focus on the Five Laws at the Zenith of the Spiral of Scientific Method, is well reflected in the family of about four dozen books of mine. The ancestor of this family is the *Five Laws of Library Science* (1931). All the books form a single unit. Indeed, they are like chapters of one huge book (*5*).

CLASSIFICATION

Ranganathan's probe into the design of a scheme for classification and the development of a theory of classification began in 1924. He felt dissatisfied at the inability of the Decimal Classification, then widely prevalent, to accommodate the newly emerging subjects. While he was under this mental pressure, he happened to visit a Selfridge's store in London. He saw there a "meccano" set—pieces of metal stripping, nuts, and bolts. With this set the salesman demonstrated that each time he combined the strips, bolts, and nuts in different ways by permuting the arrangement, he created a new toy. This caught the waiting intellect of Ranganathan and

he seized it at once, and thus emerged a new species of classification: Analytico–Synthetic Classification.

The *Colon Classification*, which was published in 1933, was the result of this triggering experience. The system assumed that each subject in the universe of subjects can be analyzed into bits of ideas. Later on, Ranganathan called these bits "facets." In due course came the concepts of basic facet, isolate facet, and speciators. These isolate facets were later postulated to be the manifestation of one or another—and of one and only one—of the Five Fundamental Categories: Personality, Matter, Energy, Space, and Time. After the publication of the Colon Classification, Ranganathan began to develop a theory of library classification. After a deep and incessant struggle, his magnum opus in classification, the *Prolegomena to Library Classification*, was published in 1937. This gave, for the first time, an integrated set of canons and principles to guide the design of a scheme for classification and for the classification of the subjects according to a scheme. While some of the canons and principles were descriptive, there were some which provided for future improvement in the design of classification.

These canons and principles were subjected to refinements while teaching library classification to students and in the preparation of the second edition of the *Colon Classification* (1939). A small team of librarians, including B. I. Palmer, worked on this subject under the guidance of Ranganathan. In 1944 the results of this research were published as *Library Classification: Fundamentals and Procedure,* by Ranganathan. It brought to the surface several unsolved problems needing fundamental research. It gave a refined account of Facet Analysis, and it also gave an inkling of the Postulates of Fundamental Categories and Phases. A comparison of schemes of classification (especially Decimal Classification and Colon Classification) was systematically done for most of the main subjects, using these guiding principles. The results were presented in 14 papers at the All-India Conference in Jaipur (1944).

In 1948, the rigidity imposed by the facet formula given under each main subject of the Colon Classification was discovered and the concept of the "Optional Facet" was evolved—that is, those facets that actually occur in the compound subjects that go with a main subject, irrespective of the facet formula. The results of this line of work were published in the series "Optional Facets in Classification" in the journal *ABGILA* of the Indian Library Association (Vols. 1–2; 1949–1951), and in the *Annals of Library Science* (Vols. 1–10; 1954–1963) in the series "Depth Classification."

In 1950 Ranganathan again dived deep toward the roots of classification. The first step in this work was to separate the work of classification into three planes—namely, idea plane, verbal plane, and notational plane. He found that the work in the notational plane usually inhibited the work in the idea plane. Work in the idea plane largely concerned the analysis of compound or complex subjects into facets, subfacets, and phases, and the synthesis of these in a helpful sequence. After 1955 a set of postulates, canons, and principles was developed. Their first enunciation was given in the second edition (1957) of the *Prolegomena to Library Classification.* Since the establishment of DRTC (Documentation Research and Training

Centre, Bangalore) in 1962, these postulates have been steadily subjected to tests while teaching practical classification to students of library science, and also in the actual work of classifying in libraries. These postulates have proved their helpfulness in developing a theory of classification. The third edition (1967) of the *Prolegomena* incorporated 13 postulates and 4 principles for facet sequences, and 21 canons and 18 principles for work in the idea plane.

The work in the verbal plane essentially centers around canons for terminology. These canons provide guidelines for homonym-free, synonym-free terms to denote ideas in the scheme for classification. The work in the verbal plane led Ranganathan to promote glossaries of technical terms used in different disciplines. He encouraged several committees of the Indian Standards Institution and the International Standards Organization to publish glossaries. Such a development, he felt, would help in developing good schedules and other vocabulary control devices. He designed a notational system which would be versatile enough to accommodate new ideas. He also started with a mixed base and, thereafter, introduced several innovations such as the Concept of Empty Digit and Sector Device for exploitation in an array and the concept of Emptying Digit and Empty-Emptying Digit for interpolation. These devices provided theoretically for an infinite number of coordinate notations in an array. The concept of using semantically significant indicator digits in a class number has provided a versatile capacity in the notational system. Mnemonic sense, comfort of memory, physiology of the eye, etc., are the guiding factors which Ranganathan infused in the development of a grammar for the notational system.

Based on these theoretical developments, Ranganathan designed systems for classification for a variety of subjects. Currently there are about 150 subjects for which Colon Classification depth schedules have been developed (*6*). Besides all these, Ranganathan's probe principally aimed at arriving at a structure for the facet syntax of a subject. Such a syntax should be an idea-syntax, free from the influences of linguistic, sociological, and cultural factors. He called such a syntax an "Absolute Syntax" and called for concerted team research from an interdisciplinary group (*7*). He conjectured that such a model would provide for the achievement of consistency and compatibility in the design of classification systems and other vocabulary control devices.

CATALOGING

The first major contribution of Ranganathan to cataloging was the design of the *Classified Catalogue Code*, published in 1935. It was probably the first comprehensive code for a classified catalog. The rules for this code were written with deep concentration after a long travail by Ranganathan. He said in 1934:

> After the *Colon Classification* came out, the catalogue valve between the conscious and the subconscious opened out. The simmering of the Classified Catalogue Code began within the mind. I had to go to Calcutta. It was a railway journey of 38 hours. . . . During the 20 hours of daylight in the forward journey and an equal extent of time in the return journey the rocking of the train, the absence of dis-

> traction by any printed stuff, and the solitude in the railway compartment helped concentration. Un-interrupted recording of the flow of the rules of the Classified Catalogue Code was the result. Some of the rules brought their commentaries in a train. On return to Madras, these were intellectually reviewed by all three of my colleagues. These were checked up and polished. Examples were provided. The press copy was typed. This was the development of the first formulation of the Classified Catalogue Code (*8*).

The contribution of the Classified Catalog Code (CCC) may be summarized in the following points:

1. It deduced the essential functional attributes of a library catalog by summarizing the implications of the five laws of library science to cataloging.
2. It deduced the most suitable internal form of a catalog (as well as physical form) that would satisfy the five laws.
3. It developed the technical terminology of cataloging to a great extent.
4. It distinguished each and every type of entry that would occur in a classified catalog.
5. It systematized and added to the principles of alphabetization.
6. It grouped the major problems in cataloging in a new and helpful way, such as:
   a. Single-volume, simple book
   b. Composite book
   c. Multivolume book
   d. Periodical publications
7. In formulating the individual rules, it took note of the unit operations involved in cataloging work—viz., choice, rendering, and recording; and in drafting them, it followed the *sutra* (epigram) style as much as the English language allowed. This invested the rules with resilience. This style further helped to implement the Principle of Unity of Idea, in drafting the rules.
8. While the drafting of the earlier codes had been empirically based on tradition, CCC had the benefit of being guided by the normative principles.
9. It dealt with the structure and rendering of Hindu and Muslim names more elaborately than any of the earlier codes.
10. It recognized for the first time that the work of determining the subject heading should be based on Facet Analysis; and it provided a procedure to derive the subject heading, namely, the Chain Procedure.
11. Its way of dealing with periodical publications was a novel feature. Extensive pragmatic research led to the identification of eighteen elemental types of complexities (falling into six groups) relating to the cataloging problems of periodical publications.
12. It furnished an ideal example of the layout of a catalog code, far more developed than any earlier code.
13. It specified that the title page is the principal source for the data elements descriptive of a document in its main entry, by enunciating the canon of ascertainability.
14. In the CCC Ranganathan further specified that the information that is necessary and sufficient in an entry statement should be derived on the basis of contextual relevance.

After the publication of the CCC, Ranganathan turned his attention toward developing a theory of cataloging. Between 1934 and 1937, some of the rules of CCC from time to time came up for critical examination by the author with his students

and colleagues. On the anvil of such critical discussions, certain normative principles of cataloging took shape. Though these were the implications of the Five Laws, they formed a distinct set of normative principles governing cataloging theory and practice. These were the canons of cataloging. Ranganathan continuously subjected CCC and other codes to a severe semantic analysis and check-up in the intellectual plane, in the classroom and in staff meetings. This helped the formulation of canons, and it also led to the establishment of the scientific method in the discipline of cataloging. The experience of this first attempt was recorded in the *Theory of Library Catalogue* (*9*). This book gave, for the first time, a comprehensive and dynamic theory of cataloging. With the aid of this theory Ranganathan made, in the *Headings and Canons,* a comprehensive study (in 1955) of five catalog codes: the Anglo-American Code, the Classified Catalog Code, Cutter's Rules, Prussian Instructions, and the Vatican Code. This comparative study not only helped to bring to the surface the merits and demerits of each of these five codes, but it also helped in the further development of the set of normative principles for cataloging. The latest to be added to this is the Canon of Recall Value (*10*), which arose in a comparative study of the latest *Anglo-American Cataloguing Rules* (1967) and the *Classified Catalogue Code* (fifth edition; 1964). This canon has given a fresh approach to the problem of cataloging of corporate names. The comparative study also helped Ranganathan in formulating standards for the layout of the Catalog Code (*11*) and the Glossary of Cataloging Terms (*12*).

CHAIN PROCEDURE

The Chain Procedure for deriving subject index entries is a very widely accepted contribution of Ranganathan. The genesis of Chain Procedure is described by Ranganathan as follows:

> The Rules of Cutter were meditated upon to discover the basic principles implied in the preferred sequence of component headings in a Multiple Subject Heading. This was not easy, as Cutter gave alternatives without giving reasons in all cases. However, some result was gotten. Then the lists of subject headings published by the American Library Association and by the Library of Congress were critically studied in the light of a few ideas—got by the study of Cutter. This led to the formulation of the principles likely to have been the basis of the work of the American Library Association though it had not been explicitly stated. Margaret Mann's writings on the subject (1930) were also critically examined. Some success came in the search for light. It was seen that a definite procedure is to find a Class Number of the book and represent it in the form of a Chain of Classes. The last link in the chain gives the Specific Subject (*13*).

This is how Chain Procedure was invented. It was experimented with in the Madras University Library. It gave a facile method for deriving the headings for subject index entries. In 1950 it was applied on a large scale in the production of the *British National Bibliography*. In a review of the BNB, B. C. Vickery remarked:

> The effect of this method is that the whole chain of classes is displayed in the index, and even if the user looks up an entry not corresponding exactly to the

> subject he seeks, he is led into the right region of classification. The "feature word" he is after can then quickly catch his eyes. The second useful aspect of this procedure is that it displays relations not displayed by the Classified List itself (*14*).

A good deal of developmental research is being carried out in India and abroad on the refinement of Chain Procedure. In 1963 E. J. Coates described Chain Procedure as an alternative to the arbitrarily limited permutation of index components (*15*). He discussed its economy, together with the problem of unsought headings and the need to exclude genus-species pairs from qualifying terms. Coates highlighted some of the limitations of Chain Procedure, but explained its capability for adaptation to alphabetical subject catalogs and for derivation of subject headings to the *British Technology Index*. In 1964 Ranganathan showed that the steps in the procedure for practical classification need not be undertaken until Step 7 (of the postulational approach), at which the class number is reached (*J. Documentation*, **20**, 109–119, 1964). On the other hand, the result in Step 5 of the procedure gives, by itself, the subject headings. The development of PRECIS (Preserved Context Indexing System, Ref. *16*) and POPSI (Postulate-based Permuted Subject Indexing, Ref. *17*) can be taken as an offshoot of Chain Procedure.

BOOK SELECTION

Ranganathan's contribution to the theory of book selection was principally derived from the Five Laws of Library Science. He identified the factors affecting book selection, as follows:

1. Universe of readers—social pressure and population pressure increase their numbers.
2. Universe of documents—publication pressure is created by the need to produce books not only on conventional and intellectual subjects of old, but also on all kinds of arts and crafts.
3. Finance—pressure caused by the fact that it is limited and inadequate.

The coordination and the resultant treatment of the three factors are to be based on a set of guiding principles; prior to the development of the Five Laws, there were only the empirical principles of Drury and Haines. Ranganathan showed that it is possible to arrive at the principles of book selection by an a priori method, as implications of the Five Laws. Ranganathan published them in his work *Library Book Selection* (first edition, 1951; second edition, 1964). Reviewing this book, D. W. Langridge wrote: "The vast majority of the principles are as valid for the most highly developed western countries as they are for India" (*18*).

REFERENCE SERVICE

E. C. Richardson's description of "Research Consultants" in his lectures at the London School of Librarianship triggered in Ranganathan's mind the concept of deeper and time-consuming reference service. He called it "Long Range Reference

Service," and in contradistinction he denoted the other kinds of reference service as "Ready Reference Service." Long Range Reference Service involves searching for the answer to the query of a reader, through a chain of documents and sometimes even through another subject specialist. Ranganathan began his experiments with Long Range Reference Service in 1926. He postulated that reference service is a kind of trialogue among reader, librarian, and the catalog. Here comes into play the psychology of interpersonal communication—the librarian's capacity to match the facet-analyzed query of a reader's requirement with the facet-analyzed entries for documents in the catalog. Ranganathan's contribution in this respect stemmed from a number of case studies collected when he was actively engaged in giving reference service, along with his colleague Sundaram. This work was followed by extensive developmental activities such as the refinement of techniques needed for the coextensive formulation of the reader's query; the development of the necessary strategies for librarians to interview readers in a productive way; and the preparation of the catalog and the shelf arrangement of documents to reflect the APUPA pattern and help browsing, either among books or among entries in the catalog, in order to formulate precisely one's own requirements (*19*).

LIBRARY ADMINISTRATION AND MANAGEMENT

Ranganathan started the rationalization of library routines in 1925 when he took full charge of the administration of the Madras University Library. He estimated that library work can be broken down to one-thousand-and-odd jobs (*20*). He also gave a full description of the routine of each job. This led to simplification of routine and a streamlining of processes, resulting in an economical flow of work. Ranganathan's theory of library management isolates the following distinctive factors of work:

1. Planning (work analysis)
2. Job analysis
3. Routine
4. Elimination of waste
5. Correlation
6. Time scheme
7. Forms and registers
8. Correspondence files and records

He also introduced "junction moments"—the moments at which two or more sections have to meet together to pass on their respective items of work.

In his attempts at work simplification, he developed various designs of forms and registers, and particular mention can be made of his three-card system for the control of receipt and payment for periodical publication. This has been used in many libraries in India. Ranganathan initiated work in manpower planning, in particular, his staff formula provided a procedure for estimating the staff needed for library work. In the 1960s Ranganathan suggested that library management may be looked at in the same way as industrial management. He pointed out that con-

cepts such as budget and budgeting control, cost accounting, and cost control are as important in library management as in any industrial management. Layout of different departments in the library, personnel management, job analysis, and wage structure—all these required a considerable amount of analysis. Ranganthan also initiated some research on time and motion study of library work. He developed the concept of Librametry—the application of statistical sciences and operations research to library procedures.

ORGANIZATION OF LIBRARY AND INFORMATION SYSTEMS

The organization of library and information systems was one of the favorite activities of Ranganathan. He aimed at developing a legislation-based library network for public libraries. He drafted several library bills in order to achieve the acceptance of the concept of a public library system by various constituent states of India (*21*). In doing so, his work clarified the differential nature of various kinds of libraries, such as national libraries, state libraries, district and city libraries, the academic libraries, and industrial and research libraries. At the apex of a national library system, he suggested setting up a series of national central libraries, both for conservation and for book and kindred document services (*22*). His principal contribution in this field was his holistic approach to library systems development.

LIBRARY HOUSING

Ranganathan crystallized the theory and practice for library buildings and furniture through a pragmatic analysis of the functional layout needed for a library building. His experience was enriched by his studies in anthropometry, psychology, bibliometry, and other economic factors in the establishment of standards for library buildings (*23*) and for library furniture (*24,25*).

PROFESSIONAL EDUCATION

Ranganathan's principal contribution lies in the fact that he established an edifice of high standards for the professional education of librarians in India. The establishment of postgraduate courses in the universities, the curriculum and the textbooks for such courses, and the establishment of cadres for professional excellence were some of his important contributions. It was because of his efforts that India took the lead in establishing master's degree and Ph.D. courses in library science.

He initiated a considerable amount of research in teaching techniques for the different branches of library science. Several case studies of teaching techniques have been published. Procedures for setting guidelines for the establishment of standards for library education were started under the sponsorship of UGC. As chairman of the Library Science Courses Committee, Ranganathan set a pattern for the courses in library science in the universities. Estimates of the staff needed and plans for raising the library manpower required to staff the public, academic, and industrial and research libraries were also worked out. These plans were proposed in a flexible fashion, so as to be amenable to periodic revisions in the light of new developments in society and educational methodology.

Conclusion

Throughout his life Ranganathan endeavored to mark out a path for library science. His objective was to find a theoretical base for the subject, which has intense practical implications. Such a base, he felt, would give scope for predictability and help the organized development of the profession. His contributions to library science stem from his inquiring mind, which was set in search of a structured pattern or paradigm for library science. Probably his creative ideas evolved from his education in mathematics. His spiritualism flowered whenever he divorced himself from the mass of details which were incubating in his mind. It worked just like the mind of a painter, who periodically steps back from his canvas to gain perspective. The integral nature of Ranganathan's theory emerged from occasional intuition; and his intellect strove to make it more explicit to the rational mind of the scientific worker. His contributions sometimes bordered on a poetic beauty and sometimes on an uncouth prose—but his life and work in the field of library science modeled an ever-inquiring mind, well expressed in the following lines from John Drinkwater's *Loyalties*:

> Haunting the lucidities of life
> That are my daily beauty, moves a theme
> Beating along my undiscovered mind.

APPENDIX

Summary of the Work and Achievements of Ranganathan

This appendix presents, in a chronological fashion, the work and achievements of Ranganathan. The contents are arranged under the following 20 headings.

I.	Summary of chief events	X.	Committee work within India
II.	Endowments	XI.	Committee work outside of India
III.	Honors/Awards	XII.	Conferences within India
IV.	Family	XIII.	Conferences outside of India
V.	Education	XIV.	Association work
VI.	Employment	XV.	Library tours
VII.	Honorary work	XVI.	Periodicals edited
VIII.	Library development plans (unpublished)	XVII.	Books published
		XVIII.	Indian standards
IX.	Library bills and development plans (unpublished)	XIX.	Library catalogs
		XX.	Articles contributed

I. SUMMARY OF CHIEF EVENTS

1924 Designed the Colon Classification
1928 Formulated the Five Laws of Library Science
1934 Designed the Classified Catalog Code
1938 Designed Chain Indexing
1950 Designed Facet Analysis
1957 Founded the Sarada Ranganathan Chair of Library Science, University of Madras

1961 Founded the Sarada Ranganathan Endowment for Library Science
1963– Developed the Dynamic Theory of Library Classification
1964– Editor of *Library Science with a Slant to Documentation;* author of 53 books and about 1,200 articles on library science

II. ENDOWMENTS

1934 Edward B. Ross Studentship, Madras Christian College
1956 Sarada Ranganathan Chair of Library Science, University of Madras
1958 Sarada Ranganathan Prize for Mathematics, Government College, Mangalore
1958 Sarada Ranganathan Merit Prize, Sanskrit College, Sriperumbudur
1959 Sarada Ranganathan Merit Prize, High School, Ujjain
1961 Sarada Ranganathan Endowment for Library Science, incorporated with the Treasurer for Charitable Endowments in India

III. HONORS/AWARDS

1935 Rao Sahib, Government of India
1948 D. Litt. (Honoris causa), Delhi University
1951 Honorary Fellow, Virginia Bibliographic Society
1954 Patron, Delhi Library Association
1956 Honorary Member, Indian Association of Special Libraries and Information Centers
1957 Padmashree, Government of India
Honorary Vice-President, Library Association (London)
Honorary Fellow, International Federation for Documentation
1962 Founder-Patron, Mysore Library Association, Bangalore
Two-volume Ranganathan *Festschrift*
Volume 1: Kaula, P. N., *Library Science Today*, 1965 (Asia Publishing House, Bombay)
Volume 2: Das Gupta, A. K., *Essay in Personal Bibliography*, 1967 (Asia Publishing House, Bombay)
1964 D. Litt. (Honoris causa), University of Pittsburgh, U.S.A.
1965 National Research Professor for Library Science (Government of India)
1967 Honorary Fellow, Indian Standards Institution
1970 Margaret Mann Award (American Library Association)
1971 Grand Knight of Peace (Mark Twain Society, U.S.A.)

IV. FAMILY

1892 Born August 9 at Shiyali, Tanjavoor District, Madras State
Family home: Ubhayavedanthapuram, Tanjavoor District
Father: N. Ramamrita Ayyar, landlord (1866–1898)
Mother: Seethalakshmi (1872–1953)
1907 Married Rukmini (1896–1928), July
1929 Married Sarada (1908–), November
1932 Son, Yogeshwar, born April 12

V. EDUCATION

1897–1908 Sabhanayaka Mudaliar's Hindu High School, Shiyali
1909 Matriculation

1909–1916	Madras Christian College
1913	B.A. degree
1916	M.A. degree
1916–1917	Teachers' College, Saidapet, Madras
1917	L.T. degree
1924–1925	School of Librarianship, University College of London
	Honors Certificate
	Practical work experience in the Croydon Public Library under W. C. Berwick Sayers

VI. EMPLOYMENT

1919–1920	Assistant lecturer in mathematics, Government College, Mangalore
1920	Assistant lecturer in mathematics, Government College, Coimbatore
1921	Assistant lecturer in mathematics, Government College, Mangalore
	Assistant professor in mathematics, Presidency College, Madras
1924–1944	University librarian, Madras
1945–1947	University librarian, Banaras Hindu University, Varanasi

VII. HONORARY WORK

1928	Vacation lecturer in laws of library science, University of Madras (at Chidambaram)
1928–1933	Lecturer on school library work, Teachers' College, Saidapet, Madras
1929–1944	Professor in library science, University of Madras
1933–1937	Vacation lecturer on school library work, University of Madras
1944	Visiting lecturer in library classification, University of Bombay
1945–1947	Professor in library science, Banaras Hindu University, Varanasi
1948	Member of the faculty, UNESCO International School for Public Librarianship, Manchester
1949–1955	Professor in library science, University of Delhi
1956	Visiting lecturer of library schools, United Kingdom
1957–1959	Visiting professor in library science, Vikram University, Ujjain
1958	Visiting lecturer of library schools, United States of America, Canada, and Japan
1962	Honorary professor, Documentation Research and Training Centre, Bangalore
1964	Visiting lecturer of library schools, University of Pittsburgh

VIII. LIBRARY DEVELOPMENT PLANS (unpublished)

1942	University of Delhi
1945	Library development plan for India
1946	University of Allahabad
	University of Nagpur
1947	Forest Research Institute, Dehra Dun
	Indian Institute of Science, Bangalore
1948	University of Bombay
	Parliament Library, Delhi
1956	University of Mysore
1957	All-India Institute of Medical Sciences, Delhi
1959	Scientific and Technical Information Centre for the Third Plan Period, a draft for the Planning Commission

1964 National Aeronautical Laboratory, Bangalore
Mysore Legislature
1966 All-India Institute of Mental Health, Bangalore
Library Building and Development Plan for the Parliament Library, Delhi
Note: For published library development plans, see Sec. XVII, Books Published.

IX. LIBRARY BILLS AND DEVELOPMENT PLANS (unpublished)

1931 Bengal
1946 Central Provinces and Berar
1947 Cochin
Travancore
Note: For published library bills and development plans, see Sec. XVII, Books Published.

X. COMMITTEE WORK WITHIN INDIA

1930–1944 Member, Academic Council, Madras University
1933–1935 Member, Imperial Library Committee
1942–1947 Member, Board of Managment, Beasant School, Kashi
1947–1966 Chairman, Documentation (Sectional) Committee, Indian Standards Institution, New Delhi
1948–1953 Member, Adult Education Council, Delhi Municipality
1948 Member, Committee on National Central Library
1948–1951 Member, National Library Committee
1958–1960 Chairman, Library Buildings, Fittings, and Furniture Committee, Indian Standards Institution, New Delhi
1958–1959 Chairman, Library Committee, University Grants Commission
1959–1961 Member, Banaras Hindu University Court, Varanasi
1959 Consultant on Library Development Plan, Kerala State
Chairman, Board of Studies in Library Science, University of Madras
1960 Chairman, Review Committee on Library Science, University Grants Commission
Chairman, Library Science Courses Committee, University of Madras
Chairman, Expert Committee on Library Science, Banaras Hindu University
Member, Board of Studies in Library Science, Osmania University
Member, Board of Studies in Library Science, Utkal University
Chairman, Committee for Library Science Course, University of Mysore
1961–1963 Chairman, Committee to Draft the Library Bill for Mysore State
1962 Chairman, Board of Studies in Library Science, University of Kerala
1965 Member, Academic Council, Bangalore University
Member, Gandhi Centenary Bibliographic Committee
1966 Member, Nehru Memorial Museum and Library Society
1967 Member, Executive Council, Publication and Information Directorate, CSIR, New Delhi
Member, Executive Council, INSDOC
1968 Chairman, Tanjavur Sarfoji Maharaja Saraswati Mahal Library Committee
Member, Government of India Committee on Development of Libraries

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XI. COMMITTEE WORK OUTSIDE OF INDIA

1948 Member, International Committee of Library Experts, United Nations
1949 Negotiated with UNESCO for the establishment of the Delhi Public Library as a pilot project

1950	Negotiated with UNESCO for the establishment of INSDOC
	Consultant, UNESCO, for preparing the place of machines in literature search
1951–1961	Rapporteur-general, FID/CA (Committee on General Theory of Classification of the International Federation for Documentation)
1951–1953	Member, International Advisory Committee on Bibliography of UNESCO
1963–	Honorary Chairman, FID/CR (Committee on Classification Research of the International Federation for Documentation)

XII. CONFERENCES WITHIN INDIA

1916	Delegate, First Indian Mathematical Conference, Madras
1919	Delegate, Second Indian Mathematical Conference, Bombay
1926	President, Pudukkotta Library Conference
1927	Local Secretary, All-India Public Library Conference, Madras
1928	Delegate, South India Educational Conference
1930	Secretary, Library Service Section of All-Asia Educational Conference, Banaras
1931	Opened the first traveling library of Madras at Mannargudi
1933	Delegate, First All-India Library Conference, Calcutta
1934	President, Tirunelveli District Library Conference
1942	Inaugurated the Twenty-Fourth Andhra Desa Library Conference, Hindupur
	Delegate, Fifth All-India Library Conference, Bombay
1944	Delegate, Sixth All-India Library Conference, Jaipur
	President, Malabar Elementary Educational Conference
1946	Delegate, Seventh All-India Library Conference, Baroda
	President, First Library Conference of Central Provinces and Berar
1947	Inaugurated the First Travancore Library Conference, Kottayam
1948	President, All-India Adult Educational Conference, Mysore
1949	President, Eighth All-India Library Conference, Nagpur
1950	President, Gwalior Library Conference
1951	Delegate, Ninth All-India Library Conference, Indore
1952	President, Conference of Local Library Authorities of Andhra Pradesh, Patamatalanka
1953	Secretary, Seminar on Literature for Neo-Literates, Okhla, Delhi
	Silver Jubilee Conference, Madras Library Association
	Delegate, Tenth All-India Library Conference, Hyderabad
1954	President, First Hyderabad Library Conference
1957	Delegate, Seminary on Productivity Drive, Government of India, New Delhi
	President, Delhi Library Association Conference on Library Movement in India, New Delhi
	President, Documentation Section, Indian Standards Convention, Madras
1958	President, Madhya Pradesh Library Conference, Bhopal
1959	Director, Seminar on Social Science Research and Libraries, New Delhi
	President, Bengal Library Conference, Nawadip
	Director, UGC Seminar on Work Flow from Publisher to Reader—Workflow in college and university libraries, New Delhi
	Chairman, Indian Library Convention, Delhi
	Chairman, Documentation Section, Second Indian Standards Convention, Hyderabad
1961	Chairman, Preservation of Documents Section, Indian Standards Convention, Kanpur

1962	Director, Government of India Seminar on School Libraries, Bangalore
	Director, Government of Andhra Pradesh Library Seminar, Hyderabad
1968	President, Fourth Iaslic Conference, Poona
1963–1972	Director, Annual Seminars of the Documentation Research and Training Centre, Bangalore
1967	Director, Social Science Research and Library Development in India Seminar, New Delhi
1968	Chief Guest Speaker, Fifth Iaslic Seminar, Durgapur

XIII. CONFERENCES OUTSIDE OF INDIA

1948	Delegate, FID Conference and Conference of ISO/TC 46, The Hague
	Delegate, Commonwealth Universities Conference, Oxford
	Delegate, IFLA Conference, London
1950	Delegate, FID Conference, Ascona
	Delegate, Special Libraries Association Conference, Atlantic City, N. J., U.S.A.
	Chief Speaker, Golden Jubilee Celebrations, Classification and Cataloging Division, American Library Association
	Delegate, Conference on Bibliographic Organization, Chicago
	Delegate, Centenary Celebration of the British Library Act, London
1954	Delegate, ISO/TC 46 Conference, Brussels
	Delegate, FID Conference, Zagreb
	Delegate, IFLA Conference, Zagreb
1955	Delegate, German Library Conference, Dusseldorff
	Delegate, Third World Congress of Librarians and Documentalists, Brussels
	Delegate, ISO/TC 46 Conference, Stuttgart
1956	Delegate, German Library Conference, Berlin
	Delegate, FID Conference, Stuttgart
	Delegate, IFLA Conference, Munich
1957	President, International Study Conference on Classification Research, Dorking
1958	Panel Member, International Conference on Scientific Information, Washington, D.C.
	Delegate, Conference on Common Language for Machinery Search, Cleveland
1959	Delegate, FID Conference, Warsaw
1961	Special Invitee, International Conference on Cataloging Principles, Paris
	Leader of the Indian Delegation, Third Centenary Celebration, National Library of East Berlin
1964	President, International Study Conference on Classification Research, Elsinore
	Principal Speaker, International Seminar on Colon Classification, Rutgers University, New Brunswick, N.J., U.S.A.
1966	Concluding Speaker, Symposium on Syntactical Relations in Classification, Maryland, U.S.A.

XIV. ASSOCIATION WORK

1916–1972	Member, Indian Mathematical Society
1917–1920	Founder-President, Mathematics and Science Association of the College
1922–1923	Secretary, Mathematics and Science Section, Madras Teachers Guild
1923	Secretary, Non-Gazetted Collegiate Officers Association
1928–1934	Treasurer, Indian Mathematical Society
1928–1953	Founder-Secretary, Madras Library Association
1928–1972	Fellow, Library Association, London

1930–1933	Member, International Library Committee of the World Association for Adult Education
1933–1972	Member, Indian Library Association
1937–1944	Vice-President, Indian Library Association
1944–1953	President, Indian Library Association
1949–1953	Secretary, Indian Adult Education Association
1953–1956 and 1958–1961	Vice-President, International Federation for Documentation
1953–1957	Vice-President, Madras Library Association
1958–1967	President, Madras Library Association
1958	Founded the Madhya Pradesh Library Association
1965–1972	Vice-President, Governing Council, Indian Statistical Institute

XV. LIBRARY TOURS

1925	United Kingdom
1945	Kerala and South Kanara
1948	Western Europe, United Kingdom, and United States of America
1950	Western Europe and United States of America
1952	Ceylon
1954	Yugoslavia and West Germany
1955	East Germany
1956	United Kingdom
1957	United States of America, Canada, and Japan
1959	United States of America, Poland, and Russia
1961	France, East Germany, and West Germany
1964	Western Europe and United States of America

XVI. PERIODICALS EDITED

1937–1947	Editorial Board, *Modern Librarian*
1939–1944	Conducted *Memoirs*, Madras Library Association
1947	Editorial Board, *Indian Librarian*
1949–1953	Editor, *Abgila*, Indian Library Association
1951	Associate Editor, *Libri*
1954–1963	Editor, *Annals of Library Science*
1959	*American Documentation*
1964–1972	Editor, *Library Science with a Slant to Documentation*

XVII. BOOKS PUBLISHED

Note: This is a concise list of S. R. Ranganathan's books. For a detailed list of publications of Dr. Ranganathan's works (up to 1961), see Das Gupta, A. K., *Essay in Personal Bibliography: Ranganathan Festschrift*, Volume 2: *Bibliography of Writings on and by Dr. S. R. Ranganathan* (Asia Publishing House, Bombay, 1965).

General

1. Papers offered to the Library Service Section of the First All-Asia Educational Conference, 1930 (edited).
2. Five Laws of Library Science, 1st ed., 1931; 2nd ed., 1957. Reprinted in 1963.
3. Education for Leisure, 1st ed., 1946; 4th ed., 1961.

4. Preface to Library Science, 1st ed., 1948. Translated into Hindi [Pustakalaya vigyan ke bhumika] by Umesh Dutta Sharma, 1963.
5. Rural Adult Education, 1st ed., 1949.
6. Library Tour 1948, Europe and America: Impressions and Reflections, 1950 and 1963.
7. Library Week Souvenir, 1963 (edited with A. Neelameghan).
8. Library Service for All, 1965 (edited with A. Neelameghan).

Organization

9. Model Library Act, 1931.
10. Model Public Library Bill, 1941.
11. Post-war Reconstruction of Libraries in India, 1944.
12. National Library System: A Plan for India, 1946.
13. Library Development Plan with a Draft Library Bill for Bombay, 1947.
14. Library Development Plan with a Draft Library Bill for United Provinces, 1949.
15. Library Development Plan for India, 1950.
16. Library Legislation, a Handbook to Madras Library Act, 1953.
17. Library Personality and Library Bill: West Bengal, 1958.
18. Library Development Plan with a Draft Library Bill for Kerala State, 1960.
19. Report of the Public Libraries Bill Committee (Mysore), 1963 (chairman of the committee).
20. Free Book Service for All: An International Survey, 1968 (edited with others).
21. Education and Library System of the Nation, 1971.
22. Public Library System: India, Nepal, Sri Lanka, UK, USA: Comparative Library Legislation, 1972 (edited with A. Neelameghan).

Book Selection

23. Library Book Selection, 1st ed., 1952; 2nd ed., 1966 (assisted by M. A. Gopinath).

Classification

24. Colon Classification, 1st ed., 1933; 6th ed., 1960. Translated into Marathi [Dwibindu vargikarana paddati] by R. S. Parkhi, 1957.
25. Prolegomena to Library Classification, 1st ed., 1937; 2nd ed., 1957; 3rd ed., 1967 (assisted by M. A. Gopinath).
26. Library Classification: Fundamentals and Procedure, 1944.
27. Elements of Library Classification, 1st ed., 1945; 3rd ed., 1962. Translated into Hindi [Pustakalaya vargikarana ke moolatatwa] by Umesh Dutta Sharma, 1967.
28. Classification of Marathi Literature, 1947.
29. Classification of Telugu Literature, 1947.
30. Classification and International Documentation, 1948.
31. Classification, Coding, and Machinery for Search, 1950.
32. Philosophy of Library Classification, 1951.
33. Classification and Communication, 1951.
34. Depth Classification, 1953 (editor).
35. Classification Research 1957–1963 (Trend report: India), FID/CR Report Series, No. 1, 1964.
36. Colon Classification (Rutgers Series on Systems for the Intellectual Organization of Information, No. 46, edited by Susan Artandi).

Cataloging

37. Classified Catalogue Code, 2nd ed., 1934; 5th ed., 1964 (assisted by A. Neelameghan). Translated into Hindi [Anuvarga-suchi-kalpa] by M. L. Nagar, 1953.

38. Theory of Library Catalogue, 1938.
39. Dictionary Catalogue Code, 1st ed., 1945; 2nd ed., 1952.
40. Library Catalogue: Fundamentals and Procedure, 1950.
41. Headings and Canons, 1955.
42. Cataloguing Practices, 1975 (assisted by Ganesh Bhattacharyya).

Reference Service

43. Reference Service and Bibliography, 1st ed. (with C. Sundaram), 1940; 2nd ed., 1961.

Administration

44. Library Administration, 1st ed., 1935; 2nd ed., 1959.
45. Library Manual, 1st ed., 1950; 2nd ed., 1960. Translated into Hindi by M. L. Nagar, 1951. Translated into Kannada by N. D. Bagari, 1964.

Documentation

46. Public Library Provision and Documentation Problems, 1961 (editor).
47. Documentation and Its Facets, 1963 (editor).
48. Documentation: Genesis and Development, 1973.

Bibliography

49. Bibliography of Reference Books and Bibliographers (with K. M. Sivaraman), 1941.
50. Union Catalogue of Periodicals in South Asia, 1953 (with others).

Academic Libraries

51. School and College Libraries, 1942.
52. Library Development Plan for the University of Allahabad, 1947.
53. Organization of Libraries in India, 1946.
54. Education and Library System of the Nation, 1971.
55. New Education and School Library: Experience of Half a Century, 1973 (assisted by P. Jayarajan).

Specialist Libraries

56. Social Science Research and Libraries, 1960 (edited with Girja Kumar).

Book Production

57. Social Bibliography: Physical Bibliography for Librarians, 1952.
58. Physical Bibliography for Librarians, 1974 (assisted by A. Neelameghan).

Adult Education

59. Social Education Literature, 1952.
60. Literature for Neo-Literates, 1953.

University Education

61. University Reform in Contemporary India, 1952.

Directory

62. Indian Library Directory, 1951.

XVIII. INDIAN STANDARDS

Note: The following Indian Standards were published under the chairmanship of Dr. S. R. Ranganathan during the years 1947 to 1967.

Classification

1. Indian Standards Institution, Documentation (Sectional Committee), Glossary of Classification Terms, IS: 2550–1963.

Cataloging

2. ISI, Documentation (Sectional Committee), Glossary of Cataloguing Terms (first revision), IS: 796–1966.
3. ISI, Documentation (Sectional Committee), Practice for Layout of Library Catalogue Code, IS: 1358–1959.
4. ISI, Documentation (Sectional Committee), Recommendations for Bibliographical Reference, IS: 2381–1963.
5. ISI, Documentation (Sectional Committee), Abbreviations for Titles of Periodicals, IS: 18–1949.
6. ISI, Documentation (Sectional Committee), Practice for Alphabetical Arrangement, IS: 382–1952.

Abstracting

7. ISI, Documentation (Sectional Committee), Canons for Making Abstracts, IS: 795–1956.

Indexing

8. ISI, Documentation (Sectional Committee), Rules for Making Alphabetical Indexes, IS: 1275–1958.

Book Making

9. ISI, Documentation (Sectional Committee), Guide for Layout of Learned Periodicals (revised), IS: 4–1963.
10. ISI, Documentation (Sectional Committee), General Structure of Preliminary Pages of a Book (tentative), IS: 790–1956.
11. ISI, Documentation (Sectional Committee), Half-title-leaf of a Book (tentative), IS: 791–1956.
12. ISI, Documentation (Sectional Committee), Title-page and Back of Title-page of a Book (revised), IS: 792–1964.
13. ISI, Documentation (Sectional Committee), Practice for Table of Contents (tentative), IS: 794–1956.
14. ISI, Documentation (Sectional Committee), Guide for Drafting Indian Standards (second revision), IS: 12–1964.
15. ISI, Documentation (Sectional Committee), Proof Corrections for Printers and Authors, IS: 1250–1958.
16. ISI, Documentation (Sectional Committee), Reinforced Binding of Library Books and Periodicals, IS: 3050–1965.

Storage of Microfilms

17. ISI, Documentation (Sectional Committee), Code of Practice for the Processing of Microfilms (silver halide), IS: 3083–1966.
18. ISI, Documentation (Sectional Committee), Code of Practice for Storage and Use of Microfilms of Permanent Value, IS: 3130–1965.

Packaging

19. ISI, Library Buildings, Fittings, and Furniture (Sectional Committee), Packages for Use of Libraries, IS: 2662–1964.

Library Buildings, Fittings, and Furniture

20. ISI, Library Buildings, Fittings, and Furniture (Sectional Committee) Code of Practice Relating to Primary Elements in the Design of Library Buildings, IS: 1553–1960.

21. ISI, Library Buildings, Fittings, and Furniture (Sectional Committee), Library Furniture and Fittings: Part I. Timber, IS: 1829, (Part I)–1961.
22. ISI, Library Buildings, Fittings, and Furniture (Sectional Committee), Librachine (Mobile Library), IS: 2661–1964.
23. ISI, Library Buildings, Fittings, and Furniture (Sectional Committee), Code of Practice Relating to Primary Elements in the Design of Buildings for Archives, IS: 2663–1964.

XIX. LIBRARY CATALOGS

1. Madras University Library (S. R. Ranganathan, librarian), Catalogue: A and G Science (General) and Natural Sciences (General) and Biology, 1939.
2. Madras University Library (S. R. Ranganathan, librarian), Catalogue: B Mathematics, 1938.
3. Madras University Library (S. R. Ranganathan, librarian), Catalogue: C Physics, 1938.
4. Madras University Library (S. R. Ranganathan, librarian), Catalogue: H Geology, 1939.
5. Madras University Library (S. R. Ranganathan, librarian), Catalogue: E and F Chemistry and Technology, 1939.
6. Madras University Library (S. R. Ranganathan, librarian), Catalogue: I, J, JA Botany, Agriculture, Forestry, 1940.
7. Madras University Library (S. R. Ranganathan, librarian), Catalogue Supplement, 1940.

XX. ARTICLES CONTRIBUTED

Dr. Ranganathan contributed 1,500 articles to the professional literature.

REFERENCES

1. S. R. Ranganathan, *Five Laws of Library Science*, 2nd ed., Asia Publishing House, Bombay, 1957, Sec. 06.
2. W. C. Berwick Sayers, "Foreword," in S. R. Ranganathan, *Prolegomena to Library Classification*, 2nd ed., Library Association, London, 1957.
3. B. I. Palmer, *From Little Acorns—The Library Profession in Britain*, Asia Publishing House, Bombay, 1966, Sec. J86.
4. D. W. Langridge, "Unified View of Library Science," *Lib. Science*, 3, 109 (1970).
5. Ranganathan, Ref. *1*, Sec. 86.
6. M. A. Gopinath, *Classification Research in India: Trend Report, 1967–1973*, FID/CR, 1974 (Report Series, No. 14).
7. S. R. Ranganathan, "Hidden Roots of Classification," *Inform. Storage Retrieval*, 3, 399–410 (1967).
8. S. R. Ranganathan, *Classified Catalogue Code with Additional Rules for Dictionary Catalogue Code*, 5th ed. (assisted by A. Neelameghan), Asia Publishing House, Bombay, 1964, Sec. AA3.
9. S. R. Ranganathan, *Theory of Library Catalogue*, Madras Library Association, Madras, 1938.
10. DRTC Seminar on Cataloguing, *Papers and Proceedings*, Documentation Research and Training Centre, Bangalore, 1970.

11. Indian Standards Institution, *Layout of Library Catalogue Code,* Indian Standards Institution, New Delhi (IS: 1358–1959; rev. 1967).
12. Indian Standards Institution, *Glossary of Cataloguing Terms,* Indian Standards Institution, New Delhi (IS: 796–1959).
13. Ranganathan, Ref. *9,* pp. 54–59.
14. B. C. Vickery, "Review of the British National Bibliography, Jan.–March 51," *J. Documentation,* **7,** 258–262 (1951).
15. E. J. Coates, "Chain Procedure: Application in the British Technology Index," *Electrotechnology,* **8,** 33–39 (1964).
16. D. Austin, *PRECIS: A Manual of Concept Analysis and Subject Indexing,* Council of the British National Bibliography, Ltd., London, 1964.
17. A. Neelameghan and M. A. Gopinath, "Postulate-based Permuted Subject Indexing," *Lib. Science,* **12,** 79–87 (1976).
18. D. W. Langridge, "Book Selection and the Five Laws," *Lib. Science,* **3,** (1968).
19. S. R. Ranganathan, "Psychology and Nature of Work of Research Workers," in *Papers for the International Congress of Documentation, Buenos Aires,* 1970.
20. S. R. Ranganathan, *Library Administration,* 1st ed., Madras Library Association, Madras, 1938; 2nd ed., Asia Publishing House, Bombay, 1960.
21. M. A. Gopinath, "History of Library Legislation in India." in *Public Library System: India, Sri Lanka, UK, USA: Comparative Library Legislation* (S. R. Ranganathan and A. Neelameghan, eds.), Sarada Ranganathan Endowment for Library Science, Bangalore, 1972, pp. 12–38.
22. Ranganathan, Ref. *1,* Sec. 85.
23. Indian Standards Institution, *Code of Practice Relating to Primary Elements in the Design of Library Buildings,* Indian Standards Institution, New Delhi.
24. Indian Standards Institution, *Librachine (Mobile Library),* Indian Standards Institution, New Delhi (IS: 2661–1964).
25. Indian Standards Institution, *Library Furniture and Fittings,* Part 1: *Timber,* Indian Standards Institution, New Delhi (IS: 1829(Part I)–1961).

BIBLIOGRAPHY

Das Gupta, A. K., *Essay in Personal Bibliography: Ranganathan Festschrift,* Volume 2: *Bibliography of Writings on and by Dr. S. R. Ranganathan,* Asia Publishing House, Bombay, 1965.

Kaula, P. N., ed., *Library Science Today: Ranganathan Festschrift,* Volume 1: *Paper Contributed on 71st Birthday of Dr. S. R. Ranganathan (12 August 1962),* Asia Publishing House, Bombay, 1965.

Ranganathan, S. R., "Librarian Looks Back," *Herald Lib. Science,* **2–11,** (1963–1972).

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READING

At first view it might seem that libraries as institutions exist because people need to have something to read. However, reading as an activity of humankind did not produce the institutions of librarianship. Even if there were no other information source but books and periodicals, the opposite of this statement would still be

untrue, nor is "reading produces libraries" a necessary statement so far as civilization itself is concerned. Libraries exist primarily because other media of mass communication are constrained by time; the message is on the wing and lost as soon as it is produced. Capturing messages and making them available to a public, or a community, that has neither the time nor the financial wherewithal to do it for itself, this justifies the existence of libraries and promises their continuation.

Reading, nevertheless, is the concomitant activity of writing, and both the production of delayed messages with a degree of permanence and the utilization of symbolized speech as a means of conveying messages account for the accumulation of information in a controlled fashion that cannot be accomplished through the human memory alone. Oral history preceded written history, but it is less authentic and more subject to doubts about its validity. The creation of a written system of symbols to match the symbolization found in natural language in its spoken form provides the most definite dividing mark between prehistory, as the term is generally employed, and the events of the past 6,000 years or so, which constitute the age when there has been a written history of humankind.

Literacy, the ability to read and write, has assumed an importance spotlighted by the recent experiences of aid to developing countries. One of the characteristics of countries where humankind enjoys less than the full fruit of civilization's progress (with only the absence of civilization's perils as counterbalance) is the lack of an infrastructure of widespread literacy. Government has an easier task among literate peoples than among those who can be addressed only face to face or through the media of extended speech such as radio and television. Government that gains no response from those governed is not only tyrannical, it is usually transient and misdirected as well. Literacy permits delayed messages and encourages what information scientists call feedback.

Just what constitutes literacy is a problem of definition with aftereffects in the extent to which a government is willing to spend time and effort on the results to be achieved. If the only purpose is to provide that the whole adult populace can write their names and read them in print, then libraries have little importance except as repositories of information for the educated elite. If something more is needed, then the functional illiteracy represented by reading and writing one's name is a heavy burden, making advancement slow and wearying. Libraries serve the developing country by instilling the reading habit, as several Latin American authorities have observed. Functional literacy means that the populace can read material likely to be found in local newspapers and popular periodicals. The masses can then be addressed with the delayed messages that are reinforced by their permanence and availability. A government can ask for and gain responses in the same delayed message form, with all its advantages of permanence. Stored messages constitute the basis on which all information retrieval relies.

Developing countries often make the mistake of designing libraries solely for those who are most able to use them. It seems so obvious a response to a recognized need that any other point of view seems far-fetched, if not foolish and unthinkable. It is the need for libraries, for the information contained within them, that constitutes the primary difference between a developed and a less than developed

society; but an effort to create an infrastructure of informed workers must begin by teaching the function and use of library resources as early as possible. The need for library services will then take care of itself. Libraries are not found where no one is willing to pay for them. Hence school libraries are the sine qua non of the developed society, especially if the teaching function of the school library is fully understood and utilized.

Literacy, from the bare beginning of writing and reading one's name, proceeds from functional literacy to compulsive reading, when the activity is an end in itself whatever the practical gain might be. Compulsive readers find the activity as necessary to their well-being as eating and sleeping, and they tend to need reading materials in much the way that they must have nourishment. However, reading does not make the mind fat, but only more selective. The compulsive reader will settle for anything in print but what he prefers is the best and most original use of his language to provide information that he finds attractive and enjoyable. It is fascinating that the purpose of reading courses, libraries, and all the intellectual exercises that they make possible is not directed toward making compulsive readers of students. *El habito del lector*, which has concerned so many Latin American library conferences, does not mean the habit of reading so much as it refers to a willingness to seek information in printed form and to compare the results from several sources. Just what makes a compulsive reader of an individual is unknown. To some extent all literate and educated individuals find reading to be both enjoyable and highly useful. Writers, in particular, tend to read compulsively, as Jean Kerr, among others, remarks (*1*), but whether this is to further themselves or as a means of escape from the labor of composition is unknown and probably unknowable.

The teaching of reading, the most essential skill to be gained in the early years of schooling, is dependent upon the written language and how nearly it represents the spoken language. It is far easier to teach children to read Russian or Esperanto—which are very nearly perfectly phonetic in representation (the graphemes are the phonemes of the language)—than it is to teach Chinese—where the written character bears no relation to the sound of the language, unless it is a part of a sequence meant to be read as a transliteration. Even Japanese, which uses some Chinese characters, has the advantage of providing phonetic representation through use of its syllabary. This is not so novel a process as it may seem. The Egyptian language which developed from hieroglyphics retained certain symbols that are words as well as representations of sequences, which are in effect alphabetic spellings of popular names. Even in Russian and Esperanto, and to a greater extent in German (which is also very nearly phonetic in written form), symbols are used with exactly the same effect as Chinese ideograms. The semantic content is conveyed by the shape of the symbol, not by its duplication of speech. At first glance this seems very economical, and so it has proved to be in the sign language used by individuals who can neither speak nor hear speech. Language, however, is available to them, both as conversation by means of signing and in written form.

An experiment in American education resulted in a whole generation of individuals who could not spell. Many could read, well and rapidly, but many more

could not. In that period, the basic theory of teaching reading of the English language was brought into conformity with the way Chinese is taught in written form, although the relationship to practices among the teachers of reading in China—for many centuries—was probably never considered. The child was taught to recognize the shape of the word, so that he could see the tail of the monkey in the letter that ends the word. He could not spell the word, but English is notoriously remote in its written form from the actual speech of any given group of speakers. When the results of this method became known, in part by the popularization of Rudolf Fleisch (*2*), a counterrevolution began. Teachers went back to phonics, the method of teaching children to read by relating sounds to letter patterns rather than to word shapes. An even further counterrevolution brought the child back to the readers used in the schools of the past century. McGuffey's readers were used because—unscientific as they might be in construction—a previous generation had learned both to read and to spell by means of them. What was not considered, unfortunately, may have been more important: the effect of the teacher and the book upon the learning process. McGuffey's readers were heavily imbued with the spirit of 19th-century England, at that time the arbiter of propriety. Few books could be more wildly limited in approach and content.

The construction of new textbooks of reading in English came to rely on the work of Thorndike (*3*) and others who studied the words that were used most often in written form and recommended that the student learn to read these words as quickly as possible, since they were self-reinforcing in the educational process. Repetition, the object of reinforcement, led to textbooks in which the student made his slow way through Jane and Spot and learned to see Jane run and to see Spot run and to see Jane and Spot run. It was very like teaching a musical instrument by repetition of scales without ever giving the student the feeling of accomplishment when he could finally pick his way through "The Happy Farmer" on the piano.

A further process which connected writing with reading had the students learn to print and then had them compose their own stories from their own experiences. This was much more successful, because there is a gap that some minds leap easily and others never cross, connecting the visible forms of the world about us with the symbolic representation. The latter are exceptional cases, however, discovered only when the teacher became less of an authoritarian who sought to achieve with discipline what only explanation and understanding could accomplish. The problem with the method lies in the imperfect representation of sounds in English. An alphabet of 26 letters is used to represent some 41 to 43 phonemes, depending on the kind of English the child has learned to speak. Further phonemic considerations are not even approached, so that stress and intonation go unrepresented completely.

Efforts to construct an alphabet that would truly represent the English language so intrigued George Bernard Shaw that he left some of his fortune to the man who would do it after his death (*4*). A reading alphabet was composed and printed by Pitman in a series of textbooks which were given a thorough trial (*5*). This alphabet reproduced all the more important characteristics of English, leaving stress and intonation to the spoken form of the language but including the distinctions between

vocalic sounds that are most obviously not conveyed by the vowels of the standard English alphabet. The problem here lies in the unwillingness of students to go on and learn spelling, especially when the tendency of English to homonymy and polysemy is observed.

Dyslexia (the inability to read, despite all efforts at instruction) is different from illiteracy in that the latter indicates a failure of society rather than a failure of the individual. The term covers a broad range of conditions which have this symptom in common and may result from organic problems of the eyes (reversed image, for instance), from functional problems of movement and control, or from emotional problems for which the teacher of reading is often responsible. Studies of the teacher's attitude toward the pupils have indicated that some teachers did not expect certain students to learn to read, and the students in their overwhelming need to gain approval did just what the teacher expected—only to find that they did not gain approval, they only confirmed a prejudice. Black students in the northern schools, in particular, have been the victims of this kind of emotional gangsterism, although the phenomenon has been observed in schools for Indian children as well, and in a more complicated form in schools where Spanish-speaking children are dumped into the English-speaking school system and condemned, a priori, for not knowing the language of instruction (*6*).

Such children, usually designated as Spanish-surname, may come from homes where their parents speak the Spanish of Puerto Rico or of Mexico, and in any case, they have learned the language of Cervantes, Saint John of the Cross, and Garcia Lorca. Linguistic snobbery is closely allied to stereotyping as the reasoning process that confirms invincible prejudice, surely the best and nearest synonym of invincible ignorance. Children should learn to read the language their parents speak, first, and then go on to learn the language of communication in commerce and intellectual exchange. The problem is most obvious in countries where the national language is known only within the national boundaries and the language of world communication is something else, usually English.

In early efforts in these countries (based on the generosity of Americans through the Ford Foundation, the Agency for International Development or its predecessors, and other organizations), textbook publishing became an important item of consideration. Sometimes the advice given to the ministers of education in developing countries concerned only the nature of a school system and often only the details for operating a ministry of education. Franklin Books Program started textbook publishing projects (notably in Iran, but also elsewhere) that assumed that the textbook should be written in the language of the country—not in English. In some places an effort was made to teach the children English, but its recognition as a foreign language made it a study for the elite of the society. Investigation of the difficulties of publishing in Twi, Egbe, Hausa, and other languages of Africa soon convinced the authorities in charge of education projects that the subject was too complicated, with too many ramifications to be dealt with. The result was that nothing was done at all. Franklin Books Programs, however, had great success in Iran, where the teaching of reading has to overcome the mismatch of the Arabic alphabet for a language that is dissimilar. The Arabic alphabet

is effective but highly complicated. Even so, children's books in Farsi, translated from American originals, began a publishing industry that today supports a large number of children's centers that include books, librarians, and many other facilities for the kind of voluntary learning essential for the development of creativity.

Literacy programs for adults often bring about great successes at the outset only to result in meaninglessness when the newly literate have nothing to read and no way to practice a skill acquired late in life. The most elementary educational psychology would demand reinforcement almost constantly if a skill is to be maintained and utilized. Laubach's early successes and significant notice in the world press were not followed up with an analysis of what happened to the literacy campaigns and their subjects 10 or 15 years later (*7*).

Functional literacy, the ability to make use of information sources in written form, produces figures much different from, and very much less than, the standard figures for literacy, which are usually based on the ability to read and write only one's name or on a level of literacy that might more correctly be called alphabetization. Laubach's methods are, in effect, a way of teaching the alphabet and the construction of words from it, but this is somewhat different from teaching reading as a skill.

In some languages, Spanish, for instance, alphabetization is a good method for beginning an approach to the language. In others it is not. In Burmese, for example, where learning the alphabet is traditional, the lengthy process of learning the complications of written Burmese is taught in the Buddhist monasteries to which boys are sent at about the age of eight. They sit in the courtyard of the monasteries under the shade of the trees or in a kind of shed with a roof and no walls, chanting the alphabet as a song. However, when faced with words, the process may leave the child unable to bridge the gap between the song he has learned and the information the text is meant to convey, even though Burmese words are generally monosyllabic. The actual reading process begins when the child, or adult, sees that words represent sounds in his language, as the way to communicate ideas, notions, moods, and facts about the world. The Spanish child deals with a fairly limited and flexible vocabulary that, except for technical terminology, is widely used all around him. Except for the confusions of "b" and "v," which are pronounced alike at the beginning of a word, there is little in orthography to make the gap harder to bridge. From alphabet to reading is not the severe process it may be for the Burman.

One of the most memorable and moving stories of the learning process is Helen Keller's description of how she came to realize that Anne Sullivan Macy was communicating with her by tapping a signal which represented the water running over her hands. This was reproduced in the stage play and in the motion picture (*8*). When a child realizes the profound possibility of communicating by means other than spoken language, he enters into a new world. Among some primitive tribes, the connection between snapshots and the individual depicted is never made. Among children with severe learning problems, the connection between language and the process of communication is never established, so that the sounds heard all about them are interpreted as signals. "Stop!" is a cry much like that of a bird or a monkey warning mate or tribe of danger. The question of whether a dog under-

stands language is different from whether it understands signals. Almost all vertebrates do.

Signs differ from signals in being nonvocal but by convention having meaning that goes beyond the emotion conveyed in an outcry. That is, the phonemes that make "stop" an English word cannot be transferred to other words. What the recipient of the message of a signal understands is the tone of voice, and possibly gestures and stance of the sender as well. Signs, however, are independent of emotion and must have intrinsic and unique meaning to be accepted. Many of these are precisely like the ideograms of Chinese. International roadsigns customarily have no words included but do provide a stylized representation of the hazard, with a person involved, and they also convey by the shapes what action the driver should take. As the stylization proceeds, its similarity to the thing represented must be pointed out in order to be realized.

In most states, drivers must pass a literacy test (which consists of knowing what the signs mean) before they can be issued a license. The driver may be functionally illiterate or completely so. The illiterate person in a developed society is at an almost incomprehensible disadvantage, so great that one must wonder at the human power of adaptability when we consider the means by which the handicap is overcome. Many such people are ashamed to have others know that they are illiterate and will use various subterfuges to conceal their illiteracy. It is considered shameful, generally, in a way that reminds us of attitudes toward physical disfigurements that are interpreted as shameful. (Curly hair among Korean men is regarded as evidence that the man cannot be trusted. One of the barber's duties is to straighten a man's curly hair, if possible. Waves are thought to be especially disfiguring.)

An illiterate person cannot be issued an immigrant visa to the United States, a disqualification exactly equal to evidence that the petitioner has been a prostitute, has a contagious disease, or has been convicted of a felony. Evidence that the immigrant can read and write is required, usually in a very gentle fashion by having the individual read a list of questions and sign his name to a document. Preference tends to be given those who read English, although knowledge of the English language is not a requirement for potential immigrants. It is, however, a requirement for the individual who wishes to enter the United States on a student visa.

Ability to read and write one's own language is obviously dependent upon the availability of something to read and the occasion for writing one's language. If the native tongue of the potential immigrant scarcely exists in written form, or if the total reading material is a missionary's translation of the Bible, then the rule of literacy is a kind of linguistic injustice, however wise it may be in application. In fact, individuals who do not know English, who have no close relatives (parent, spouse, or children) who are United States citizens, and who come from a country where there is considerable competition for United States immigrant visas, may face an overwhelming handicap. Such persons ordinarily are required to present a document from a sponsor stating that there is a job available which cannot be filled by a citizen of the United States. This is issued by the Department of Labor and is responsive to the level of unemployment at a given time.

Literacy education for adults grew up at a time when immigration laws were not so strict and it was common for individuals to seek an immigrant visa or simply land in the United States and obtain entry upon arrival. Libraries, among other institutions, conducted courses for those who wished to become citizens, since the required knowledge of the English language included literacy along with a knowledge of the government of the United States. The applicant for citizenship is still tested to see if he can meet these qualifications. Generally the examiner will ask the individual to write a sentence which he dictates. In a case known to the undersigned, a highly literate individual who happened to be bilingual in English and an obscure Asian language was asked to write "I go to work in a car." (She had carefully written out the Preamble to the Constitution of the United States and taken the copy with her to the examination, in case the examiner asked her to recite it as part of the examination. All her efforts to commit the noble words to memory had failed, and she planned to say that her memory was not good enough to retain the statement, but that she would not go out of the house without a copy of it.)

Since immigrants customarily begin at the bottom of the work scale in menial jobs, low in the employment pecking order, an individual who attends literacy classes is likely to be marked for a certain amount of discrimination by his associates. A long-standing custom has put literacy classes in bank buildings, because no one is ashamed to enter such a place, with its connotation of finance; while the public school or even the library meeting room, if used for the purpose often enough, confers a kind of guilt by association. There is not a reason in the world for a person of adequate mental ability to feel guilty because he cannot read or write. Often the teachers in the public school system which failed to educate him while he attended several years of schooling have no feelings of guilt, although they are richly deserved.

Students in classes where reading aloud is commonly used to test their ability and several students read the same passage over and over may be able to memorize what is said without ever making the connection between the spoken words and the printed page.

Reading aloud is now widely understood to lead to such evidence of inadequate ability as moving the lips while reading. Simply connecting the written form of the language with the spoken form is not enough. Words assume a kind of ideographic value that enables the speed-reader to grasp the sense of a page of printed material without meticulously pronouncing each of the words. If the individual has been taught phonics as well, so that he can spell out into spoken form those words that otherwise are meaningless, he can usually find the sought word in a dictionary in cases where the spoken word has as little meaning for him as the word in written form. In a language with a rich vocabulary, such as English, Arabic, Japanese, and Burmese, dictionaries are a necessity for reading. Speed-readers, however, will rarely need a dictionary for their reading because they grasp the context of a word well enough and quickly enough to assign a meaning to the stray word that lies beyond their experience. Various courses are offered to aid those who have come through a school reading program only to find themselves less than instructed and somewhat unskilled as readers.

There is a definite correlation between compulsive reading and rapid reading. Some individuals can claim to be compulsive readers in two or more languages. The process of going from speech to the written form of the language is as effective in learning a foreign language as in learning to read the mother tongue. At an earlier stage of language instruction, students were taught only how to translate the foreign tongue to be learned. They then faced the difficult sequence of recognizing the word form, recalling an equivalent word in the native tongue, and pronouncing it to themselves, before they could grasp what was conveyed in the foreign language. Even if a language is to be learned only for the purpose of reading it, or primarily for this purpose, the method of instruction should proceed along the lines that established an ability to read when the individual learned his own language. From speech, first recognition and then production of the spoken word, the individual proceeds to visual representation of the word. The process may seem simultaneous, especially for literate individuals who have better visual recall and need something seen to remember something heard, but in fact the process is a sequence in which the spoken form comes first, the written form is recognized, and the one provides feedback for the other.

By accident, the Esperantists have always emphasized the spoken form of the language, even though its use has primarily been for written messages. Letters between Esperantists account for the hostility toward the language exhibited at various times and in various places in the history of the language. Individuals have been sentenced to labor camps as dangerous internationalists or even executed as spies simply because they belonged to an Esperanto association and corresponded with fellow enthusiasts abroad.

Esperanto will most likely be chosen the international language from among the very many constructed and popularized ones, not because it is the simplest but because it has been around the longest and has proven itself effective in written form. Ido, a simplified form of Esperanto, failed to have much effect on the movement toward one language for the world, a phrase used by Mario Pei for a book title (*9*). However, Esperanto has been used for so long a time (nearly a hundred years) and so large a literature exists in the language, that it has become the only really serious candidate for universal adoption.

The history of Esperanto demonstrates a fact about language that was unknown heretofore. A written form of a language tends to preserve it. The languages that are lost are not simply the ones that have no living speakers, although that is an important part of the process, but also the ones that have no accumulated literature. Just as reading a foreign language from time to time serves as a review of one's knowledge, revivifying the spoken as well as the written recognition, something to read tends to preserve a language among its speakers.

Those languages with the greatest literatures are both the most widely known and the most likely to survive. Languages that remain within a national boundary, spoken by a few thousand individuals, may disappear without a trace. A language declared to be the national tongue tends to develop a literature (even if comprised only of government documents) and it may survive although its speakers are customarily multilingual.

In such multilingual countries, inability to learn a foreign language may be a

serious drawback both financially and socially. Denmark and the Netherlands demonstrate this in different ways. Danish is difficult for nonnative speakers to pronounce, so that visitors to Denmark are not expected to speak Danish. A person who does so and who looks foreign may not be understood unless he is personally known as a Danish-speaking visitor. The tourist industry is supported by personnel who know several languages. Nevertheless, the Danes prefer their own language, in part because of their own literature, great amounts of which are translations. Equally, original works are translated into other languages. The great best seller of some decades ago, *Kon-Tiki,* was written in Dano–Norwegian, therefore comprehensible to Danes, and it was almost immediately translated into Esperanto. The English version was the third of many other translations. Danish literature is increased by the number of books written by Norwegians, whose language is differently pronounced but virtually identical in the written form, to the extent that cultural exchange in written form is easy and profitable.

Dutch is much more widespread, in closely related dialects such as Afrikaans and Flemish. Both Dutch and Danish have been revised orthographically to match the changes in the languages that have occurred since the spoken tongues were committed to variations of the Latin alphabet. While some 20 million people speak Dutch or one of its close variants, only 5 million people speak Danish, and another 5 million speak Dano–Norwegian. The variation between Danish and Norwegian is no greater than that between Afrikaans and the Dutch of the Netherlands, depending on what emphasis is laid on the differences. A language, though, might be unacceptable and seen as very different because of the prejudices of those who speak a closely related tongue but continue to resent previous periods of domination. Equally, languages may be altered for reasons of nationalism.

The distinction of a separate language is accorded to Norwegian more on the basis of its literature and the history of the country than on the basis of its distinctions from Danish. In fact, it is inappropriate to speak of a Norwegian language, since the language of the north, among the people who live in the mountains, is much closer to Icelandic than to Danish. There is comparatively little published literature in this language, although there is a great deal in the language used by the government. The names of these languages preserve the distinctions: Landsmaal and Riksmaal of former times have become Nynorsk (New Norwegian) and Bokmaal (Book Language), with the addition of a language that combines elements of both (proposed, but far from accepted), known as Samnorsk. Language engineering in Norway has made itself felt in political decisions. Nevertheless, the existence of such literary figures as Ibsen and Hamsun continues the significance of a language best called Dano–Norwegian, not so much because of its identity with Danish and Norwegian, but because the literature and the style differ far more greatly than a cursory linguistic comparison would indicate.

Swedish, again a different language, bears a close relation to all these languages of Scandinavia, and yet any attempt to convince Danes, Swedes, and the Norse that they are speaking dialects of a kind of central language would only incur bitter argument. What has created the separation is more the written form of the language than the variances in speech.

This leads invariably to the creation of a written language, the language of

learning and culture, and a spoken tongue. Such dialects may be social or they may exist (and be mapped) geographically, the evidence of a lack of communication in earlier times. Dialects may be close to a mother tongue and be considered separate languages, or they may be remote and be considered dialects, depending on the existence of a literature and national boundaries rather than on any scientific measure of comparison. There is much evidence that the dialects and languages of ethnic groups brought into communication with a larger group using a common language tend to disappear. The language of Brittany and that of Cornwall, though closely related to the language of Wales, have virtually disappeared, while the Welsh that excites national feelings grows stronger by becoming a literary language as well as a bone of contention.

The language taught in schools as English is the written form of the tongue, but the normative method has convinced many students that there is something sub-standard about the particular variation they use, when it is in fact simply different so far as a linguist is concerned. Reading a work written entirely in dialect would be hard work for the more than 350 million speakers of English. If English did have a common alphabet that perfectly represented the sounds of all its variant forms, it might be more a bane than a blessing. The range, after all, is from Gullah, spoken along the Atlantic coast in southeastern United States, to "Strine," the name given English as it is spoken in Australia. The customary etymological spellings in English have produced a unity of semantic value, independent of pronunciation variants, that gives each word something like the significance of a Chinese character, with its radical and other strokes combining to create an easily recognized word. Speed-reading depends to a large extent on a recognition process that is the same in Chinese and in English.

Whether the choice is to popularize Esperanto as the one language of the world, which everyone will learn after learning his mother tongue, or to preserve the mother tongue itself and provide it with the greatest utility, the process must go from the spoken form to the written form by hearing and speaking the language and then learning to read it and finally write it. If those people of the world who have spent years attempting to learn English—only to find that they cannot write in a way that will not provoke gales of laughter among native speakers—finally decide to adopt another language (as could be done if everyone wished to take the trouble), then the linguistic domination of the English-speaking countries will end. As it is now, scientific journals commonly include English abstracts, whatever the language of the text, and many scientists refuse to publish their work in the journals of their own country because the national language has so few readers. The fate of Rasmus Rask may be unknown but it retains a cautionary significance. Rask was probably the first philologist of note in modern times, if not the first linguist. Much of his work foreshadows what was done later as original work by philologists and linguists up to the point of his rediscovery. Rask's great deficiency was that he wrote in Danish, which few linguists would bother to learn to read although there was less excuse for linguists not to learn the language than for anyone else, since works of such value were written in it. It is much simpler than Sanskrit, which used to be considered a required language for any advanced study of

philology. Scientists can be excused from not learning the several dozens of languages in which information could be published. They have done enough when they learn English, often the language of their education and the language of scientific discourse in written form.

Reading is a skill that makes libraries important to the user. The transfer of information can be silent, rapid, unhindered, and unchanneled, especially where a policy of freedom of information is maintained. Even in the countries where total control of the publication of materials is challenged only with great danger, certain individuals are permitted to read whatever they wish. Reading has always been in some way tied to elitism, a threat to those whose horizons are safely and comfortably limited. "Reading rots the brain," according to the New England proverb. In many novels of simple folk, reading has an almost ominous significance; it is the hobby of a dangerous character whose innovative ideas motivate the plot and establish a conflict. In Steinbeck's novella *The Pearl*, the object of all the suffering is to gain enough funds so that the children of the simple Mexican folk can "open the books and read from the books" (*10*). That Steinbeck found this less than a desirable ambition is indicated by the tragic ending of the story.

Censorship is the archenemy of librarianship not so much because it makes the concept of truth its first victim (if not the truth itself), nor because it preserves officially recognized hypocrisies and the accepted self-delusions of society, but because it tends to create uniformity where variety is wanted. Librarianship ceases to have a meaning when its practitioners are limited to a mechanical rigamarole and prevented from displaying in the collection their awareness that writing is a search for further evidence and reading a way of uncovering it. The elitism that allows high officials to read anything they want is the line of demarcation between selection and censorship so far as the librarian is concerned. Granting the prejudice of the undersigned, librarianship is the one profession that makes an ethical necessity of egalitarianism. We must collect everything that the community we serve will find useful and broadening in outlook, or at least make arrangements that will provide access to it all, because reading combined with skill in using a library puts everybody on the same footing so far as information is concerned. It is only when the information may not appear openly in printed form that we line up users in hierarchies of privilege, a kind of classification that finally must change the library into a literary warehouse. Reading can become a way to health and happiness just as much as exercise and proper diet.

Bibliotherapy, the use of books as a way of treating emotional difficulties, is not really an innovation. From the poems of early times, to the passages in the Bible that are most apropos, to the latest thriller, a reader tends to find what gives him something he needs, whether relaxation, sympathy, or inspiration. The course of bibliotherapy, like any other course of instruction, is toward opening up one's mind to something besides material that confirms prejudices and assures that the penultimate, or at worst ultimate, truth of existence has been found. Readers, unless persuaded by some kind of adviser, will generally pursue whatever provides comfort rather than challenge. The reader's adviser in earlier times was not needed merely to help locate a book, and the advisory librarian or information specialist

of present days is not needed just to explain the way a reader can find what he wants, but also to provide assurance that the reader can find and understand what will best meet his needs, rather than what he would settle for in its stead.

Much more is to be considered as our understanding of reading and all its ramifications increases. That literacy appears to be losing the battle in the race with population growth, that the concept of obscenity as a legally defined danger has gained a new lease on life despite the obvious results of some dozen years of freedom in the world community, that critics see as much reason for gloom about the future of literature today as they ever did in the past—everything that insists that we are all wasting our time as librarians bows before the fact that the amount of knowledge to be gained from information sources remains a constant for most people while the information avalanche has provided a wealth and variety never hoped for in the past. It is here that the librarian is most closely tied to the skill of reading, whatever his stock in trade. In providing access to this variety one encourages reading, and reading encourages users to find answers to the most obvious problems. That these will be resolved only to make us aware of newer and more complex questions which are not now capable of being asked should be seen as the chief reason both for writing and for reading and certainly for the creation and maintenance of libraries as the great memory of humankind.

The experience gained among librarians as technical assistants makes the following scenario the quickest way for a country to develop from a nonliterate multitude who rely on the radio or face-to-face exchanges for information to one in which delayed messages are needed and useful as information sources. Literacy must be combined with the availability of materials. Television, which can include reading material as well as the spoken language, is a good way to teach reading, as "Sesame Street" and "The Electric Company" have shown. Libraries are needed, however, if the message is not to be lost because it is constrained by time. Developing good school libraries and libraries for children outside the schools is the surest way of developing a willingness to use library resources, if there is any hope at all. School libraries are the essential element in a society where reading is an accepted skill and one that makes the novice with limited potential the equal of a specialist outside his field. An understanding of the use of libraries for reading material and for information proclaims the sound fact of our common ignorance while it promises steady progress toward continuing enlightenment.

REFERENCES

1. Jean Kerr, *Please Don't Eat the Daisies*, with drawings by Carl Rose, 1st ed., Doubleday, Garden City, N.Y., 1957.
2. Rudolf Franz Flesch, *Why Johnny Can't Read and What You Can Do About It*, 1st ed., Harper, New York, [1955].
3. Edward Lee Thorndike, *The Teacher's Word Book of 30,000 Words*, by Edward Thorndike and Irving Large, Teachers College, Columbia University, New York, 1944.
4. *Shaw: An Autobiography; 1898–1950: The Playwright Years*, selected from his writings by Stanley Weintraub, Weybright and Talley, New York, 1970, 2 vols., Vol. 2, Appendix I, "Last Will and Testament," pp. 236–237, Sec. 35 of Shaw's Will.
5. Sir James Pitman, *Alphabets and Reading; the Initial Teaching Alphabet*, by Sir James Pitman and John St. John, Pitman, New York, 1969.

6. Robert Rosenthal and Lenore Jacobson, *Pygmalion in the Classroom*, Holt, Rinehart and Winston, New York, 1968; Chap. 5, "The Disadvantaged Child," pp. 51–52.
7. Marjorie Medary, *Each One Teach One: Frank Laubach, Friend to Millions*, Longmans, Green, New York, 1954.
8. Helen Adams Keller, *The Story of My Life*, by Helen Keller, with her letters (1887–1901) and a supplementary account of her education, including passages from the reports and letters of her teacher, Anne Mansfield Sullivan, by John Albert Macy, Grosset & Dunlap, New York, 1904.
9. Mario Andrew Pei, *One Language for the World*, Devin-Adair, New York, 1958.
10. John Steinbeck, *The Pearl*, Viking Press, New York, 1963.

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READING FOR THE VISUALLY IMPAIRED

Definitions

VISUALLY IMPAIRED

The term "visually impaired" includes both the partially seeing and the blind populations. A blind individual is one who gains information primarily through senses other than the visual, using instead the auditory and/or tactual senses. A partially seeing individual is one who gains information primarily through the visual sense, although certain adaptations may be necessary, such as various optical aids and enlarged print.

READING

The definition of reading requires differentiation between the physical act of reading (of using one of the senses) and the interpretive or meaning-attached aspect of reading. Regardless of the sense used by an individual to read, the significance of the reading activity is comprehension or meaning. For all readers, this part of reading takes place in the brain. The eyes, ears, or fingertips used by readers are merely the receptors and channels used to feed the brain unprocessed information. To distinguish, then, between the definition of reading for those who use the visual sense and for those who use other senses, the description of the physical activity components of reading will be the area where differentiation is useful.

Background of Reading for the Blind

The blind reader, then, can use either a tactile or an aural approach to meet his reading needs. Many use both, at different times, for different reading activities. This practice is often a necessity, as only a limited amount of reading material is

available in both aural and tactile form. Often the blind reader must accept the material in whatever form provided, regardless of a personal preference for either aural or tactile reading.

Various tactile reading systems have been explored in the past. Raised letters and raised letter modifications, as well as several embossed dot systems, have been developed and used. It was not until approximately 1950 that Standard English Braille, an outgrowth of the original braille form developed by Louis Braille in 1829, was consistently used.

Braille is a "touch" reading system, used by passing the fingertips over embossed characters. The embossed characters are formed using various combinations of dots within a six-dot cell, two dots wide and three dots high. Braille is read from left to right, with the reader usually reading with one hand and keeping his place on the page with the other hand. Once material has been transcribed into braille, it can be reproduced using a heat process called thermoforming. Material relying upon illustration (other than charts and graphs) for much of its meaning often cannot be reproduced effectively in braille. Embossed illustrations can be made for braille reading material; however, many illustrations will have little or no meaning in tactile form.

Braille reading presents certain insurmountable disadvantages to the blind reader. The average braille reading speed is about 60 words per minute, which is approximately one-third to one-fourth of the pace of the sighted reader. Also, braille is very bulky and, therefore, presents both storage and portability problems. A high school textbook often requires 8 to 15 volumes when transcribed into braille.

A world braille system for all languages was adopted by UNESCO in 1950. This system needs refinement and has not been widely publicized during the past 25 years. The present procedure for transcribing into braille those foreign languages which employ the roman alphabet involves the use of uncontracted braille, a simpler but longer form of the code. Special symbols have been devised to represent the various accented letters, special punctuation, diphthongs, and vowel signs peculiar to each language, for which there is no English braille equivalent. For foreign languages not using the roman alphabet, braille equivalents have been devised for both the alphabet and special symbols which the languages contain.

Other tactile reading approaches center around the electronic conversion of print into a tactile array of some kind. Optical-to-braille converters, which convert the image of a printed symbol into the corresponding braille character, have been designed, but presently are not in wide use. Growing numbers of blind readers are, however, now using optical-to-tactile converters. The Optacon, whose name is an abbreviated form of "optical-to-tactile converter," operates by converting the image of a printed symbol into a corresponding tactile image which can be felt by the fingertip.

Although current average reading rates obtained using the Optacon are even slower than average braille reading rates, the Optacon's applicability to any print medium is considered a great advantage to many blind readers. The blind reader can now enjoy total independence and privacy, which can be particularly important for reading tasks during the blind person's working day or for personal matters. Many blind readers consider independence to be of great value.

Because the aural modes of reading seemingly allow passivity on the reader's part, they are often not viewed as reading by the sighted world. To most blind readers, however, aural modes have an important role in meeting reading needs. In particular, those blind readers who are unable to use the tactile sense (such as those with diseases or conditions where loss of sensation in the extremities occurs) must rely solely upon aural reading systems.

Perhaps the earliest and the most simplistic aural reading mode is the reader for the blind. A reader is simply a sighted person who reads aloud that material which is requested by the blind individual. The reader may be paid or may perform this service voluntarily.

Talking Book records are special phonograph recordings, usually of fiction, distributed by the Library of Congress without cost to libraries requesting them. Funds for their production are provided by the federal government. Talking Books are generally heard at the rate of 150–175 words per minute. They may be sent through the mail, free of charge, between the blind reader and the library housing them. Libraries are also provided with special record players (Talking Book Machines, designed to play Talking Books or other records), which are also loaned out to eligible persons. In this way, Talking Books and Talking Book Machines are easily available to all who need them.

Various reading materials, often textbooks, are recorded by trained readers onto reel-to-reel tapes, as another aural reading mode. After obtaining the reel-to-reel tape recording, the blind reader must have access to a reel-to-reel tape player.

Cassette tape recordings for aural reading are also produced and their use is growing due to the convenience of the cassettes themselves and the increased portability of cassette players. The size and the cost of such devices have decreased substantially recently. In addition, four-track capabilities are now available in both cassettes and players, making time limitations on cassettes less restricting.

Relatively recent attempts to increase reading speed using tape-recorded materials have resulted in growing production and use of compressed speech. Compressed speech can be produced in two ways. Now manufactured are cassette players with variable speed capabilities. Speech compression takes place through the use of a special module. The speech quality is normal when using such machinery, as the "Donald Duck" sound can be removed from the speed-increased speech. Also in production are precompressed cassettes, playable in any tape player. The cassettes are presently rather expensive and are not widely used. To use compressed speech of any kind effectively, one must possess efficient listening skills.

Experimental forms of special short-form languages (like verbal shorthand) are being researched, also for the purpose of increasing reading speed using tape-recorded material.

There are in existence aural reading devices which convert print to tones. One such device in production is the Stereotoner. A device that produces tonal output operates by converting print characters into the tones assigned to them. The blind reader must learn to identify what characters the tones represent.

Much of the current research in aural reading devices for the blind, however, is directed toward the conversion of print into speech analogs. Certain devices under study convert print into spelled-speech output. More sophisticated devices convert

printed material into phonetic-speech output. Speech is usually considered the best output medium for obtaining the fastest reading rates for blind readers.

A sophisticated reading machine which produces synthesized speech output from print characters is the Kurzweil Reading Machine. This device scans a printed page and produces a coded electrical signal to represent each scanned character. The electrical signals are used to drive a synthetic speech device, which feeds a loudspeaker or earphones. The machine has controls which can slow it down, back it up and repeat, or spell out words not understood by the reader. A device of this type offers the blind reader still another choice in independent, rather unrestricted reading—in the most familiar medium: speech.

A new project, coordinated by the Library of Congress, Division for the Blind and Physically Handicapped, has resulted in an experimental dual-purpose reading machine. This machine will scan printed words and produce both synthesized speech and braille output—should its further development result in its production. The experimental machine will adapt the Kurzweil Reading Machine for production of braille coding. Braille copies will be provided by computer. This device would allow the blind reader great reading access.

The producers of the Optacon are developing a speech output accessory for the Optacon. Such an accessory is expected to use the MIT text-to-speech system, would allow for hand scanning of print material, and would stress intelligibility and naturalness in the speech output.

The notion of print conversion to tactile or aural form is of great importance to the blind reader, since such a small percentage of all reading matter is available in any one of the three usual forms for the blind: braille, magnetic tape, or recorded disk. With print conversion, the blind reader is no longer restricted in reading choice. All printed material becomes readable on an independent basis.

Background of Reading for the Partially Seeing

Partially seeing people have available various options to aid their reading problems. Large print materials, generally considered to be 18–24 point type, are utilized widely. This enlarged material is found in books, magazines, newspapers, and other published material. Some large type material is produced from existing small type editions, through the use of photographic enlargement, and other large type material is published directly by publishers. Many publishers give blanket permission for the enlargement of their published materials for the use of the visually impaired. This courtesy saves time for those who provide the visually impaired reader with needed reading matter.

Large print editions of materials, like braille editions, are often cumbersome and lack portability, compared with the regular size print version. Also, the ever-growing use of color illustrations and color in print creates problems, as enlargement machines cannot reproduce this color and often produce a faded and almost unreadable enlarged copy. However, even with these disadvantages, the use of photo-

graphic enlargement for large type production provides the partially seeing reader with reading material which otherwise would be unavailable.

Along with large type, optical devices are utilized by the partially seeing to aid in providing better reading capabilities. The most widely used and recognized optical aid is the corrective lens. This aid is found in the form of glasses or contact lenses. The purpose of the corrective lens is to partially or completely compensate for refractive errors in the eye, therefore permitting those with ocular conditions that can be corrected by such lenses to read printed material.

Optical enlargement devices are also widely used to increase the reading capabilities of partially seeing individuals. The optical enlargement devices, unlike corrective lenses, only magnify whatever the reader is attempting to see and do not compensate for vision problems requiring more than magnification for correction. Such devices can be divided into, perhaps, two major categories: simple devices and complex devices. Simple optical devices are available in the following modes: worn magnifying devices, hand-held magnifiers, illuminated hand-held magnifiers, and illuminated table model magnifiers. The use of one of these devices rather than another often depends upon the individual preference of the partially seeing reader.

The illuminated devices are designed to not only provide magnification but to supply the light needed to provide better contrast between the print and the page. These simple magnifiers are available in varying powers of magnification. Again, selection is dependent upon the individual reader's eye condition and upon his own preference. Common disadvantages of hand-held magnifiers are their limited scope and the tendency to distort and abberate.

More complex magnifying devices are used in enlargement and projection equipment. Such devices enlarge and project printed matter onto a built-in viewing screen through the use of reflective principles. These devices provide a higher degree and a wider field of magnification than the simple devices. They also produce less distortion of the printed material. However, they do lack the easy portability of the simple devices and instead lend themselves to the stationary reading area, such as a library, home, office, or school.

Another option open to the partially seeing reader as a reading aid is the special enlarging microfiche reader. Such a microfiche reader, through a magnification system, enlarges the material on the fiche more than the ordinary microfiche reader, and it projects large type onto the viewing screen.

Another type of complex optical enlargement device is the closed circuit television enlargement system. Such systems usually consist of a small camera and a special monitor or regular television screen which magnifies printed material electronically. Black–white contrast can be intensified and negative images (white on black) can be used to reduce glare. These devices also provide a high degree of magnification and rather distortion-free reproduction of printed material. However, there exists the same portability problem as with the enlargement and projection devices. Once again, as with the simple devices, the individual's eye condition and his own preference will decide which type of reading device is most appropriate and useful for his needs.

Partially seeing readers can also benefit from the aural reading approaches which were discussed earlier in regard to the blind reader. The various types, such as the reel-to-reel, cassette, and phonograph recording, are used by the partially seeing reader to augment his visual reading. His visual condition may not permit him to use his eyes to read for long periods of time, or he may suffer from a visual condition which changes. The aural option provides, in many instances, a faster and more efficient method for obtaining information. Recorded materials are particularly useful when neither large type editions of reading material nor enlarging equipment are available.

Library Systems for the Visually Impaired

In terms of informational needs, the library is as important for visually impaired persons as for sighted library users. However, librarians, while they desire to serve the visually impaired population, have always encountered the problems of how to identify and most efficiently and effectively meet the special needs of the visually impaired library user.

Certain modifications of the traditional library system must be employed so that the visually impaired user can fully utilize the many services of today's libraries. The following discussion points out some of the modifications that libraries must consider.

Space utilization is always a prime concern in a library, and particularly so when providing for visually impaired library users. If a library expects to provide braille material, much shelf space is necessary due to the size and bulk of braille volumes. The same is true of large type material. Thus, additional space is a necessity.

Lighting facilities should be better than average, including overhead fluorescent lights and individual high intensity lights at each desk, as well as areas with abundant natural light. In general, most partially seeing users will benefit from improved lighting conditions.

Special reading equipment, as previously discussed, should be available in the library. It is highly desirable to have available not only magnifiers, optical enlargement devices, and closed circuit television enlargement systems, but also print-to-tactile converters, recorded tapes, tape players, Talking Books, Talking Book Machines, and special enlarging microfiche readers. If possible, card catalog entries should be transcribed into braille, following the format of the card closely. With such special equipment and materials available, a visually impaired reader can take full advantage of a library's holdings.

Varied sources for obtaining braille, large type, and recorded publications must be sought out in order to provide a continuing supply of reading matter for the visually impaired population.

Another major consideration is the library's loan policy. Visually impaired readers generally need longer periods of time to read loaned materials. Therefore, consideration should be given to extension of the normal borrowing time for library matter.

Finally, it is desirable to have personnel who are acquainted with the special problems that visually impaired library users may encounter. This personnel should be available to assist whenever necessary. For example, a blind library user might have difficulty locating and using the card catalog. The attuned librarian can assist the individual with understanding.

Major Organizations That Provide Reading Matter for the Visually Impaired

Some major organizations which provide reading matter for the visually impaired are the following:

The Library of Congress, Division for the Blind and Physically Handicapped, conducts a national program which provides free library services to handicapped readers, both legally blind persons and those unable to read conventional print material because of physical limitations. From an appropriation provided annually by Congress, the division supplies Talking Books, Talking Book Machines, magazines recorded on records and on open-reel and cassette tapes, and braille books and magazines to visually impaired and physically handicapped readers. This is achieved through a network of 48 cooperating regional libraries across the United States.

The American Printing House for the Blind, Incorporated, produces braille and large type reading material, Talking Books, and tape-recorded material. In addition, this organization produces flexible disk recordings of various magazines for the Library of Congress and other agencies serving the visually impaired. It also develops and produces a wide variety of educational aids for the blind.

Recording for the Blind, Incorporated (RFB), is a national nonprofit voluntary organization supported entirely by contributions from the public, foundations, the corporate sector, and individuals. RFB provides taped educational books, free on loan, to visually impaired and physically handicapped elementary, high school, college, and graduate students throughout the United States, as well as to adults who may require special reading material. RFB produces books on both reel-to-reel and cassette tapes. The organization utilizes over 4,000 trained volunteers to do the recording in 27 recording studios located throughout the United States.

Additionally, there are many other private, commercial, and volunteer organizations from which a visually impaired person can obtain braille, large type, and recorded reading material.

The Role of Volunteer Groups

Even with all the technological advances in reading devices and methods of producing reading material, and the increase in the sheer quantity of reading material produced for the visually impaired, it is unrealistic to assume that all the reading needs of this group are presently being met. For example, suppose a blind stu-

dent needs a text that is unavailable through any source providing braille matter. A possible solution to his problem would be to contact a local volunteer braille association to request hand transcription of the needed text into braille. This is just one example of how volunteer organizations can help to fill the gap between an individual's needs and the available material.

Volunteer braillists are obliged to obtain a Certificate for English Braille Transcription from the Library of Congress, Division for the Blind and Physically Handicapped, in order to transcribe under its sponsorship. This provides for the necessary uniformity in transcriptions.

Presently, volunteer groups provide not only braille transcription services but also tape-recorded books, magazines, and newspapers. Volunteers sometimes also act as readers for the visually impaired.

Reading Instruction for the Visually Impaired

Teaching reading to visually impaired individuals, both blind and partially seeing, should be undertaken only by those teachers specially trained to educate the visually impaired or by those teachers who receive consultative services from such specially trained teachers. Professional preparation of teachers of the visually impaired includes training with modified facilities, equipment, materials, and teaching methods peculiar to this field. Without these necessary modifications in reading instruction, acquisition of reading skills in visually impaired individuals may, at best, be hampered and, at worst, may be prevented.

Although the actual methods of teaching reading to the partially seeing may often be basically the same as for sighted individuals, certain considerations must be kept in mind. Reading readiness, or readiness for learning to read, will need to be more intense and will need direction toward overcoming experiential gaps caused directly or indirectly by significant visual impairment. Many partially seeing persons do not have the same, or as many, experiences which contribute to the concept development necessary to reading. Also, skills of visual discrimination will undoubtedly require much greater emphasis than with the normally sighted prereader, as a part of the readiness process.

Some other considerations which must be dealt with in reading instruction for the partially seeing can be categorized within visual efficiency, an approach to visual functioning developed by Dr. Richard E. Hoover. Those instructing this group in reading must be aware of the various internal and external factors which determine the use made of available vision at a given time. Such factors include not only near and distance visual acuity, but also the load and duration of visual performance under varying conditions. Visual efficiency is, by definition, an approach to visual functioning that is dependent upon individualization. Because of this, reading instruction for partially seeing individuals is often totally or in part an individual process. Additionally, the reading instruction process may often include training in the use of special equipment and aids, and such training must be individualized to be useful.

Teaching reading to blind individuals will include considerations similar to those for the partially seeing in regard to reading readiness. Experiential gaps will most probably be greater, due to lack of any visual stimuli. Concreteness, whenever possible, is of great importance, particularly in the development of concepts. Tactile readiness is helpful prior to reading instruction using a tactile reading system. Just as certain visual discrimination skills are prerequisites to reading for sighted individuals, tactile discrimination skills are helpful in readiness for using a tactile reading system.

Reading instruction techniques may include the use of several highly specialized approaches. There are several methods of teaching braille reading and each method has its proponents. Methods and curriculum for teaching reading using print-to-tactile equipment have been devised and are currently being field tested and developed further. Approaches vary, as do prospective tactile readers, and some teacher-generated methods are used.

For reading instruction using aural means, auditory discrimination and listening skills are useful. Training in such areas can increase attention span and comprehension while using the auditory channel.

Reading for the visually impaired population is a many-faceted topic involving highly specialized equipment and varied considerations. The sighted reader is able to take for granted what the visually impaired reader must carefully arrange. However, increased technology and improved services are helping to make reading material more usable and available for this population.

BIBLIOGRAPHY

Al-Doory, Shirley, *Communication for the Blind,* Part I: *Right to Read for Blind and Physically Handicapped,* Part II: *New Think: Communication Is for Everyone,* Library of Congress, Division for the Blind and Physically Handicapped, Washington, D.C., 1972.

Carroll, Thomas J., et al., *Standards for Production of Reading Materials for the Blind and Visually Handicapped,* National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York, 1970.

Code of Braille Textbook Formats and Techniques, 1965, American Printing House for the Blind, Louisville, Ky., 1973.

Davis, Philip, et al., "A Closed-Circuit Television System as a Reading Aid for Visually Handicapped Persons," *New Outlook for the Blind,* **67,** 97–101 (1973).

Dorf, Maxine B., and Earl R. Scharry, *Instructional Manual for Braille Transcribers,* Library of Congress, Division for the Blind and Physically Handicapped, Washington, D.C., 1967.

Goldish, L. H., and M. H. Marx, "The Visually Impaired as a Market for Sensory Aids and Services: Part Two, Aids and Services for Partially Sighted Persons," *New Outlook for the Blind,* **67,** 289–296 (1973).

Goldish, L. H., and H. E. Taylor, "The Optacon: A Valuable Device for Blind Persons," *New Outlook for the Blind,* **68,** 49–56 (1974).

Graham, Milton D., "Toward a Functional Definition of Blindness," American Foundation for the Blind, New York, 1963, pp. 130–132 (*Research Bulletin,* No. 3).

Griffin, Margaret, and Donald W. Eberly, *Visual Problems and Reading,* National Reading Center, Washington, D.C., 1971.

Harley, Randall K., *Comparison of Several Approaches for Teaching Braille Reading to Blind Children, Final Report,* George Peabody College for Teachers, Nashville, Tenn., 1969.

Kamisar, Hylda, and Dorothy Pollett, "Talking Books and the Local Library," *Lib. J.,* **99,** 2123–2125 (1974).

Lowenfeld, Berthold, *Our Blind Children—Growing and Learning with Them,* 3rd ed., Charles C. Thomas, Springfield, Ill., 1971, pp. 133–134.

Moore, Mary W., and James C. Bliss, "The Optacon Reading System," *Education of the Visually Handicapped,* **7,** 33–39 (1975).

Nolan, Carson, and June Morris, *Aural Study Systems for the Visually Handicapped, Final Report,* American Printing House for the Blind, Louisville, Ky., 1973.

Ovenshire, Ruthann, *Reading Material in Large Type: Reference Circular,* Library of Congress, Division for the Blind and Physically Handicapped, Washington, D.C., 1973.

Self-Study and Evaluation Guide: Section D-1; Library Services, National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York, 1968.

Sloan, Louise L., *Aids for the Partially Sighted,* National Society for the Prevention of Blindness, New York, 1966.

Tobin, M. J., and W. R. K. James, "Evaluating the Optacon: Some General Reflections on Reading Machines for the Blind," *AFB Research Bull.,* **28,** 145–158 (1974).

Understanding Braille, American Foundation for the Blind, New York, 1969.

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RECALL

See *Precision and Recall*

RECORDS MANAGEMENT

One of the greatest challenges facing us today is how to most effectively and economically control and utilize an ever-expanding information base. On all levels of government and in industry and business, technological and social changes have brought about the need for the creation and dissemination of an endless array of records in various formats. While much of the information demanded and produced is needed, there is also a proliferation of useless and duplicate materials. Ever present is the problem of getting the maximum value out of this abundance of information and at the same time bringing some sense of order and cost effectiveness into its management. The answer to our problem must come from the leadership in all segments of our economy.

Multifaceted Responsibility

The solution to any management problem requires the involvement of all the functions which may be concerned with its results. In the area of information—its creation, dissemination, and use—several disciplines are involved. These disciplines must operate in a coordinated effort to assure maximum results. They must encompass the elements of information or records creation, maintenance, retrieval (use), retention, and protection. The disciplines include records management, computer technology, library sciences, and archival management. Superimposed upon these is a multifaceted capability known as micrographics. Whether it is a manual or automated system under consideration, the possible use of this discipline must be carefully taken into account—with emphasis on *carefully*. Each of these disciplines can stand alone, but operated as a combined concept under the general term of information management, they are far more efficient, cost effective, and productive.

Computer technology, micrographics, archives, library science, records management—each, regardless of the organizational approach involved, must retain its own identity and professional independence. Periodic efforts have been made to combine the practitioners in these activities into a single association. None of these efforts has thus far been successful, and understandably so. The reason is that each is a discipline in its own right, with its own body of knowledge and with a dedication to the pursuit of its own goals. For example, maximum advances in computer and micrographic technology can only be made if those skilled in these disciplines independently pursue their own goals. It is this pursuit that brings pride in professionalism, and independent associations have nourished this pride by the granting of certification based upon status and examination.

So it is clear that these disciplines must have their independence, at least professionally. And yet, it is essential that in any organization their skills be coordinated so that they all work in tandem toward the achievement of the organization's objectives. They must operate under an administrative umbrella, preferably under a single administrative head—this administrative umbrella forms the framework for a true information management system.

In practice, some of these disciplines can be combined because of their close relationships in the records cycle. In the United States one of the gathering forces has been records management. Its total involvement in records processing, as we shall see, makes it the practical guardian, for example, for micrographic operations. Micrographics is a workable records format used in lieu of hard copy, and it is an integral part of the creation/preservation cycle. Records management is also concerned with the "time capsule" or historical accumulations needed for long-term business use. Records management and systems/computer management have become the foundation for a corporate identity in information management. A further analysis of this concept will demonstrate the reasoning behind its acceptance.

With the exception of records management, each of the disciplines mentioned has been a long-accepted part of our business and governmental environment, with some gaining quicker acceptance due to their technological impact on techniques

for handling information. It is also worth noting that two (micrographics and computer technology) are heavily involved with hardware or equipment, while the others are primarily *management* oriented. Libraries and archives, of course, utilize equipment, but their operations do not involve any one category or type of equipment. It is essential, then, to have these disciplines work as closely together as possible in order to assure that—in solving information problems or curbing the information explosion—the best use of all available knowledge and skills is made, and that budgetary requirements governing their uses are kept within reason.

Records Management

As we consider the information problems of the future and the possibilities of a paperless society, we can also observe that two of our available disciplines (computers and microfilm) are for all intents and purposes, paperless. Libraries and archives have as their objectives the serving of research needs and the preservation of records and information, regardless of format. Records management has no commitments to systems or formats and this has been the basis for its acceptance and growth as an arbitrator in the total spectrum of information management—an effective means for controlling and reducing unnecessary records. Its objective is initially *less paper*. This is what is really needed in order to even approach the possibilities of *paperless* societies. Presently there is no cure-all for the information explosion, but failure to coordinate the disciplines that we do have, will further prevent its containment and forever lock us into a seemingly endless data trap.

Records management is defined as:

> That administrative system which concerns itself with the control of records and information from their creation to their ultimate disposition.

It must, therefore, include along this route the maintenance, use, and protection of such records and information. Within this framework are forms, reports, correspondence, drawings, maps, and the like, whether they be in magnetic, micrographic, or hard copy formats. This all-encompassing concept of records management did not just happen. It evolved from a void in the business environment caused by a lack of interdisciplinary coordination. This isolation of objectives has resulted in splintered areas of responsibility and added administrative costs. Archivists have pride in their heritage—the ancient Romans and Athenians set up such repositories for their historical documentation. As soon as man decided that he could benefit from having two books instead of one, the library came into being and the public began demanding such resources. In 1812 Charles Babbage started making some fascinating discoveries leading toward computer capability. Rene Dagron, toward the end of the 1800s, perfected a micrographic technique. In the early 1900s, filing personnel began to find mutual interests, although they limited their initial efforts to devising workable filing systems. All of these systems were the nuclei for information management. They defined an area and created a growing concern for organized records care. They must not be splintered. Records management has helped to

minimize this splintering. To appreciate fully the evolution of the concept of records management and how it has benefited the information demands of government, business, and industry, a brief chronology of events is in order.

Historical Background

One hundred and forty-five years after the founding of the United States, its legislative body (Congress) passed the National Archives Act. This was the first official act establishing a central agency for the records of the federal government. Practitioners in the National Archives, mainly historians, soon became the cadre of personnel to assist agencies in the management of the growing volume of World War II documentation. Disposition of records on a scheduled basis became a necessity. In 1946 a Commission on the Organization of the Executive Branch of the Government, popularly referred to as the Hoover Commission, was established to draft a blueprint for postwar government. One of its task force operations was paperwork management. Under the direction of its chairman, Emmett Leahy, the task force uncovered countless examples of excessive recordkeeping costs, and its subsequent recommendations resulted in the establishment of a housekeeping agency (General Services Administration) and the transfer of the National Archives to this agency. This brought about a broadening of the latter's responsibilities by designating it the National Archives and Records Service (NARS). More significantly, a Federal Records Act was also passed which made retention scheduling, records centers, and records systems functions of the National Archives and Records Service and fixed agency responsibility for compliance. It recognized and advocated an integrated records management system. Thus, it was the federal government in the United States that gave records management its impetus and, in fact, it continues to do so. A law recently passed by the United States Congress, which amends the Federal Records Act, provides a 1976 Bicentennial version of records management, and a very inclusive one at that. It states:

> Records Management means the planning, controlling, directing, organizing, training, promoting and other managerial activities involved with respect to records creation, records maintenance and use, and records disposition (*1*).

It was the result of a governmental commission study that committed Canada to this same "cradle-to-grave" principle of records management. The Royal Commission on the Organization of the Government of Canada (Glasscoe Commission) in 1960 also recognized the continuous process of records creation, management, retrieval, and disposition. The dominion archivist of Canada today operates a Records Management/Archival Agency similar to that of the NARS in the United States.

With the need for such control of records clearly established by events in government, Emmett Leahy took records management into the private sector in the early fifties, and since that time records management has grown dramatically and

has become one of the most significant administrative cost reduction techniques available to management. In 1956 several filing associations joined to form a records management association, five chapters strong with some 350 members. Today the organization boasts over 4,000 members and 75 chapters. Its growth is attributed mainly to the demand for experienced records management personnel. This organization, the Association of Records Managers and Administrators, is one of the founding groups of the International Records Management Federation, of which Australian and South African records organizations are also members.

Acceptance of a Concept

Unfortunately, records management, as covered in the previous definitions, was not always fully accepted as an approach to the solution of records problems. It came into being from a gradual and natural consolidation of related functions. Retention scheduling and records centers had the first and strongest impact on paperwork accumulations since they offered the most immediate, practical, and cost-saving solutions to the problem of records accumulations. The concept of records management has, in fact, greatly enhanced the potential of micrographics. The initial impact of microfilm was due to its value as a space-saving device. It was heralded as a panacea for cluttered offices and files. Its capabilities in this regard could not be denied. Nevertheless, micrographics would have remained in this niche much longer if retention schedules and records centers had not proved that there were other and more efficacious solutions. What resulted was a refocusing of microfilm objectives from storage and retention to systems and source document applications. This latter use of microfilm has caused its phenomenal growth. Within the concept of retention scheduling, responsibility for archival records also became a matter of concern. Filing had established its traditional records maintenance role, so it fell into the records management pattern. Forms and reports were generally regarded as the responsibility of systems and procedures departments—but a logical transition to records management evolved. The battle of territorial rights prevailed for a time and, to a minor degree, continues. Nevertheless, in all cases where forms management has been included as part of records management, it has been a sucessful merger.

The inclusion of forms and reports was not an attempt to bypass the systems and procedures organization in this melding of records activities. It was a practical transition based upon the logical premise, "If you take the records out of systems and establish a separate managing unit, the systems group can concentrate on pure systems activities." This, it was felt, would leave a highly qualified systems group and an equally qualified records group, expert in forms analysis and design, that could provide the necessary input for a total and effective systems study. This was a team effort directed toward providing maximum capabilities. Each group could then work at maximum efficiency. In fact, this "pure systems" group became the forerunner of the computer programming operation. With this added dimension, the team effort now became even more versatile, for it was ready and able to attack any problem, whether it involved manual systems, computer systems, or a combina-

tion of both. The consolidation of records management responsibility in one organization thus became a workable concept governing forms, reports, and correspondence; all are concerned with the processing of information; all are subject to systematic control devices (a uniform number/subject system could be applied to regulate the control and analysis of each); all have a technical relationship (the need to be properly designed for preparation, processing, and filing); all are valuable tools in a systems study (bringing them together provided a valuable reservoir of information on how things were being done); and all—forms, reports, correspondence—when properly managed, are tangible avenues for cost reduction. A major factor in the success of records management, or any discipline for that matter, is its ability to effect cost savings. With all paperwork costs thus pinpointed, management can more easily appreciate the need for its control.

Those in the field of records management/information management, today, must therefore have a broad educational and experience background to qualify them for this all-inclusive responsibility. The records management certification program in the United States includes exposure to computers, micrographics, archives, and the traditional recordkeeping functions. University degrees are now offered in records management with specific courses on all disciplines. We acknowledge that the intent is not to "take over" or "absorb" these disciplines, but to provide a managerial capability for better understanding and utilization. Records management, because of its concern with all information formats, must of necessity provide expertise to work with them.

Organizational Position

As records management became more clearly defined and its overall benefits became evident, its position in the organizational structure also went through changes. As a function initially concerned with filing and retention, it was generally recognized as a function of the corporate secretary, the legal custodian of records. As it began to encompass forms and reports, it shifted to the financial area or controller, since this was the traditional location for systems groups; and, with records management taking on a cost-saving character, this also logically placed it near a budget control function. This latter office is where the majority of records management programs reside today. A more practical positioning of records management—because of its companywide interests—is under the supervision of an administrative vice-president. Each of these offices is at the top of the organization table, and functions reporting to them receive management support and companywide acceptance as well—ingredients of paramount importance in managing records and information. Of course, not all organizations are large, and records management in the small company must not be neglected. Thus a part-time position may be in order, or the function might be included as part of a service or officer manager's responsibilities. The important thing in any organization, large or small, is that the term "records management" should exist, be clearly defined, and be authoritatively positioned.

What is becoming a prevalent positioning in larger United States organizations

today includes a director or manager of records management, who reports to a vice-president–controller with line or staff (or a combination of both) functions, and is supported by records management coordinators on a branch or division level.

Where records management operates as a staff function, it develops and administers general policy governing the program and participates in or coordinates large-scale efforts for system design changes with other corporate staff functions and operating units. For example, a personnel organization might contact the computer systems department requesting a review of its companywide system aimed toward possible mechanization. The records management group is then contacted to lend its expertise in how the procedures are currently handled and what other related solutions might be available (use of micrographics). The two organizations in a team effort then develop a new system—if it is, in fact, justified from both a cost and efficiency basis—and records management provides all the needed follow-up in forms design, records handling, reports control, retention, and the like. Implementation then becomes an operating unit or division task with guidance from the computer/records management staff functions.

In a line concept, records management would do much of the detail as well: microfilming, if involved; forms procurement; filing equipment layout; and the like. The records management line operation would also handle computer-output-microfilm equipment in an off-line format—a popular viewpoint in micrographic/records management operations.

Records Management Functions

To more clearly understand the full involvement of the records administrator in the information management cycle, let us review some of the staff responsibilities of this position:

1. Administer an organizationwide records management program in accordance with governmental and legal requirements, as well as with the organization's operational and long-range needs. Assure the development of and approve retention schedules commensurate with these needs and requirements.
2. Administer an organizationwide vital records program to protect essential company records from natural, man-made, or accidental disasters; covering, but not limited to, documentation involving technical data and computer operations. Prepare such audit reports as may be necessary to assure compliance with the program.
3. Publish and maintain an organization Records Management Manual to be used organizationwide by all personnel assigned to work in records management functions.
4. Counsel, advise, and assist organizational branches in the establishment and operation of records management programs. Periodically review the branch operations and make recommendations as deemed appropriate. Arrange for the interchange of pertinent records management data, equipment, and techniques among branches.
5. Provide an organizational records center to adequately house and protect company records. Supervise such a center. Assure that similar facilities are provided in other geographic areas as deemed necessary. Supervision of these

other facilities may be assigned to a branch located in the immediate area of the records center. Monitor organization records center costs and prepare operating cost schedules and forecasts for distribution of records center costs. Records centers are repositories for semiactive and inactive records. When this facility is available, it sometimes houses micrographic units, but the records center should not be responsible for such an operation, for this would tend to give microfilm the character of a storage medium rather than an up-front systems technique.

6. Provide advice and counsel to branch and subsidiary technical libraries on the interchange of technical information between such operations. Assist in surveys or studies that may be undertaken to improve in-house information retrieval systems. Libraries are a key to the retrieval and dissemination aspects of information management.
7. Serve as organization archivist and provide for the collection and housing of company historical records. Assist public relations activities in the gathering of such data as may be required for special studies or releases.

   One can comment further on this archival element. The archivist today is well recognized for his role in determining the historical value of records and assuring their proper housing and access for research. This ascendancy in the information management spectrum came from a natural outgrowth of the library sciences and the need for someone to organize specific collections other than printed material. As a result, archivists further separated themselves from librarians by forming their own professional organization in the United States, the Society of American Archivists. Recently, this same change came about in Australia with the formation of the Australian Society of Archivists.

   The archival discipline is firmly established and well recognized in governmental operations. As the custodian of governmental records, the archivist has also become involved in modern records management as well. In industry, unless an organization is large enough to support a special company archives (Ford, du Pont, Eli Lilly, Coca-Cola), archives are the responsibility of records management. The archivist/records manager or the records manager/archivist relationship is a necessity, with both having separate as well as mutual interest in the life cycle of records.
8. Supervise a company/agency forms and reports activity. Standardize common-use company business forms to the extent necessary to provide economies in procurement and operational effectiveness in usage.
9. Provide counsel and advice in all matters related to the functional areas of records management, including reports and forms control, records retrieval, retention and protection, filing instructions and filing systems, and also the peripheral equipment associated with these functions.
10. Assure the proper use and application of microform systems and provide direction for compliance with federal recordkeeping requirements.
11. Participate in and represent the corporation in company/government/industry trade association activities related to records management functions. Be aware of significant development and trends throughout industry and by suppliers, and recommend, as appropriate, application within the organization.
12. Serve as company representative, under the direction of the corporate legal counsel, in legal matters regarding company records.

On a similar level with the position of director of records management would be that of a director or manager of computer technology, or director or manager of systems planning—if they are separate departments—thus providing the strongest

possible team for coping with the information explosion. This relationship extends beyond the systems study for any organization. Records management provides for the proper housing, maintenance, retention, and protection of computer tapes and printouts. In exchange it, too, uses computer systems in the handling of its schedules, records centers, forms and reports control, and related control requirements.

The organizational structure within government has had a similar development. As discussed, records management in the United States started in the National Archives; then the General Services Administration branch came into being, giving it a governmentwide control force. On the state level, records management began, and still continues to a large degree, as a responsibility split between the secretary of state and state-level General Services Administration organizations. In the individual states the archives have taken a very independent status, with records management (services) becoming an administrative function. There are proponents for such a separation on the national level as well.

Paperwork is a major issue. The United States Congress recently authorized the establishment of a Commission on Federal Paperwork. Its task—like that of its predecessor, the Hoover Commission—is to reduce the reporting burdens imposed by the government on the private sector. Several states have also established similar study groups. The emphasis in American business is no longer simply on how to promote records management, but on the question of how soon such programs can be implemented in order to obtain the maximum benefits from information management disciplines.

There is no single function in business that can effectively control the information explosion, but records management touches more of the factors contributing to this explosion than any other management resource. Properly supported, organized, and used, it provides an arsenal of information for management, serves as a valued assistant to systems and computer specialists, and provides the needed controls for safely and effectively defusing the information bomb.

Future Challenges

A recent issue of *The INFORMMA*, publication of the New South Wales Branch of the Records Management Association of Australia, contained the following reprint from the *Journal of the Australian Institute of Management:*

> Before the year 2000, typewriters, filing cabinets, even that prestige symbol, the desk, may have disappeared from common usage.
>
> As one cynic put it: "Offices are merely places where people come together each morning to exchange pieces of paper."
>
> Millions of people are employed simply to shuffle endless streams of paper from one place to another, and we crowd into cities to make this shuffling easier. But the problems of storage and retrieval have become immensely difficult.
>
> The computer terminal, the printout mechanism, the teletype, the picture-phone, the instant replay, the world conference by instant television contact, will all ultimately change the face of the office (2).

This excerpt clearly identifies a problem of concern to people in any business enterprise today and it also indicates those techniques that could well cause the problem to eventually disappear. There is no doubt that the computer has revolutionized methods of doing business, and its ability to manipulate, transmit, and display data has started the march toward a paperless society. Opposing this effort is man's insatiable appetite for information in all forms. The computer can provide management with more information than ever before, more rapidly than ever before, and in modes it used to feel were too costly to attain. The end product in all cases is a visual one, printouts (hard copy or micrographic) or display. This capability has projected us into a totally new concept for transacting business, and its awesome speeds and accomplishments have easily overshadowed what may well be considered the mundane world of paper shuffling.

It is clear that we are no longer a *pure* paper society. Equally significant to this computer capability is the amount of information and documentation that is required to feed these machines and keep their "digestive system" going. The character of our term "file" has changed. It was once considered basically a paper or folder of papers, but the term is now used to denote papers, photographs, photographic copies, maps, machine-readable information, or other recorded information regardless of physical form or characteristics—information which is accumulated or maintained in filing equipment, boxes, or machine-readable media, or on shelves, and which occupies office or storage space. Records management is, therefore, a system for all record formats. Take, for example, automated data processing (ADP) records management.

The objectives of ADP records management are to ensure efficient and economical automatic data processing by: using proper records and preservation techniques of machine instructions and operating procedures; by establishing standards for proper maintenance, storage, and disposition of machine-readable records; by developing optimum procedures for computer rooms and related support areas; and by reviewing these recordkeeping practices on a continuing basis to find opportunities for improvement.

ADP records management includes the maintenance of a current file-by-file inventory of machine-readable records and the accompanying documentation for each file, and the maintenance of these files while carrying out periodic checks to verify readability. Documentation of ADP records consists of functional and operational flow charts; physical file characteristics; and recording mode information including basic coding structure (code books), records system information, record layouts, printout plans (formats), and basic run instructions (run books).

Paper Record Values

To envision a paperless society, or one even close to it, is totally unrealistic. If we were to place total paperwork on a scale of 100, our efforts to date might drop it to 95% or 90%. In order to achieve any meaningful advancement toward a worthwhile reduction, we cannot rely on any one technique or device. In our quest to

achieve the paperless society, we must fully utilize the practical aspects of records management. We have called records management the "birth-to-death" cycle of information. This is an applicable span regardless of the format of the information or the manner in which it is generated. Before examining some of the major aspects of records management, let us review some of the factors that we must keep in mind as we consider our transition to the paperless society:

1. *Traditional Values:* The prospect of change has always caused a temporary block to progress. We become used to doing something a certain way and are usually uncomfortable when a change is proposed. Look how long it is taking the United States to convert to the metric system. There are day-to-day transactions involving pieces of paper, the absence of which would completely confuse today's consumer. Consider Machiavelli's statement in this regard: "There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in a new order of things" (*The Prince*).
2. *Legal Values:* Rules of evidence in many jurisdictions still require original documentation. There are many categories of records that cannot be presented in any format other than paper.
3. *Accounting and Audit Values:* The "audit trail" is an extremely difficult one to un-paper. Books of records, transaction documents, supporting evidence—all must be available. Even where magnetic tapes or micrographics are acceptable as evidence, the ability to produce a hard copy still exists.
4. *Legislative Values:* Each time a new law or regulation is issued, it invariably imposes some type of reporting or recordkeeping requirements. The National Archives and Records Service in the United States releases an annual publication entitled *Guide to Records Retention Requirements*. It covers the various agency rules and regulations on records that must be retained and their retention periods. There are over 1,000 such citations, and these are in addition to the reporting that is required. One of the most significant efforts in reducing paperwork in this area has been a proposed legislative "cost impact" review process. This would require that each act introduced in a legislative body contain a section on the cost effect it will have, where reporting or recordkeeping is involved.
5. *Societal Values:* The desire to leave a record of his existence seems to be as ancient as man himself. From etchings on cave walls to machine-sensible records, this desire has manifested itself in archival holdings around the world.
6. *Procedural Values:* Even the most sophisticated information systems rely on paperwork. Computer systems must be programmed and documented. With the exception of COM (computer output on microfilm), microfilm systems exist primarily as the result of a paper copy of something. No one seems to be predicting the demise of the reader/printer.

Records Management Elements

The computer can do most anything we want it to do. Micrographics has significantly changed the way in which we maintain and use records. Records management is needed by both to provide the overall management controls needed for any

information and records-producing system. These management controls involve the elements of records creation, maintenance, use retention, and protection.

RECORDS CREATION

The best data are those which are clearly justified and identified before they come into being and which, once created, serve a meaningful purpose until they are properly dispositioned. Forms and reports are essential to the proper operation of any business activity. As methods of communications and measurements of progress, they can be most effective if limited to essentials and designed for efficiency and economy. Whether prepared for manual use, computer input, or eventual transfer to a micrographic format, forms require a traditional examination of spacing, line forms, data arrangement, and legibility. Highlighting the need for controls over paperwork creation (as with many of the records management elements) has been the cost factor. The ability to put a dollar value on the processing of data has enabled the records manager, in many instances, to justify his function. Studies in various business fields have shown that, generally speaking, 84.4% of every dollar spent on forms is attributed to the clerical processing of those forms, 11.2% on maintenance, and 4.4% on the printing of the form. This clearly demonstrates the need to make certain that forms are not only limited in number, but—more important—that those that are used be designed for easy preparation, efficient extraction of data, and ease of filing.

To provide the analytical capability needed to examine these requirements, records management utilizes the ingredients that are essential to a complete understanding of records—inventory and collection. These are: a complete inventory of files to provide a full understanding of all records, their location, identity, volume, and housing; and a collection of forms and reports to establish numerical controls, functional analysis (the ability to examine the use and purpose of forms with the possibility of eliminating them, combining them, or modifying them to reduce clerical effort), and specification analysis (adopting better procurement or reproduction techniques for cost-savings benefits). These principles are applicable to reports as well. What better way is there in pursuing a *less paper* objective? This also identifies the information reservoir mentioned earlier. Equally important in this creative area is the proper management of copying equipment. Advances in office copying equipment, while commendable, have lured the unsuspecting office worker into becoming a homegrown reproduction giant.

RECORDS MAINTENANCE

Creative processes in records management include the proper preparation of correspondence, the arrangement of written materials into usable filing sequences, and the selection of the most efficient types of filing equipment. Decisions as to centralized versus decentralized filing are in the realm of records management, for such decisions will determine the location of key documents and guarantee their

availability for years to come. Many of our information searches today would be much simpler if uniform and understandable filing classifications had been established when the materials were first placed in file.

The application of functional filing systems in many of our local governments in the United States today is an excellent example of how records can be evaluated the moment they are filed. In these systems, files are identified as to which ones are routine and can be discarded from the office, which must be stored for a given period of time, and which must remain in the office as continuing references or historical documents. The system includes ten major-subject breakdowns, utilizing a numerical identity.

Filing procedures today cannot be limited to paper records. It is here that we are finding visible evidence of the waning of the paper record. Microfilm formats and machine-sensible data are causing departures from the standard filing cabinet or shelving. Many file rooms are now identified by magnetic tape holdings, microfilm readers and reader/printers, display devices, and rapid delivery devices. Many are also incorporating word-processing centers to further maximize equipment usage and reduce clerical effort. Word processing has become the latest "buzz word" in the area of correspondence preparation, copy preparation, and catalog preparation and revision, as well as other communications. Its end product is a document of some sort. So once again we have a device that will give us more effective and efficient output in a minimum amount of time. We no longer have to write ten drafts of a paper. Paper is waning. Yet, the end product is still paper. Our philosophy of less paper, rather than paperless, is still the best initial attack strategy.

What is involved in our maintenance sector is not only the control of our generated correspondence, but the control of that which enters our system through our mailing operation. Proper regulation of incoming materials and their timely routing and follow-up must be considered as well.

RECORDS SCHEDULING

Assuming that we have been successful in developing a records system that limits the amount of forms, reports, and the like that are needed for operating purposes, then we must set guidelines for the periods of time they must be kept. This element within records management is perhaps the one that is uniformly accepted as a needed control. Records accumulations are easily identified. Crowded files hamper daily activities. The most prevalent question regarding records gatherings is "how long do you keep them?" The most effective guidelines are records retention schedules. To be meaningful, they must be based upon a complete knowledge of the records (an inventory), consider the elements that govern their retention (an appraisal of their administrative, legal, and historical value), and allow for proper approvals (the corporate or legislative support to assure compliance with the schedules). The schedule then becomes a guide to the file user, not only in terms of the total value of a record, but also specifying how long the record is required as an "active" source of information, before it can be transferred to an "inactive area."

The term "records series" is a key to the success of the schedule and the handling of departmental files. Records series are groups of related records, which are filed together as a unit and used as a unit, and which can be evaluated as a unit for retention purposes (personnel files, purchase orders, correspondence). This considerably reduces the time required to pull documents for storage or disposal.

Scheduling for retention in our paperless society must cover all formats. Magnetic tapes must be identified in terms of their value in the processing cycle as well as their value for retention. Documentation that is a part of its operations (flow charts, procedures, program decks, and the like) is also involved. Scheduling must also note the use of microfilm where it replaces hard copy. The quality of the film must be such that its life value meets that required for the hard copy it is replacing. Because of microfilm's increasing acceptance, care must be taken not to ignore or overkeep records because there is less pressure from a space standpoint. A valid legal position is always enhanced by a continuing and uniform policy and procedure for retaining records.

RECORDS CENTERS

Evolving from the archival concept, the records center came into being primarily as a repository for those records that required retention for a specified period of time rather than permanent retention. The theory of separate facilities for these classes of records still dominates the government scene. In industry the records center, over the past decade, has undertaken a much broader responsibility, and we are finding more and more examples of such repositories now combining inactive and archival records, along with the vital records of an organization.

The records center has been, is, and will continue to be an essential part of records management. Its ability—under proper planning—to provide practical control of, management of, and accessibility to needed information on an economical basis has made it a key operation in regulating records accumulations and use. From a visual standpoint, the records center today (except for some modernization in building construction and color selection) is a carbon copy of those first introduced in the 1940s and '50s. And why not! The basic ingredients still work: low cost housing equipment, maximum utilization of space, easily identified location numbers, and pinpointed indexing. The records center, in terms of today's records management philosophy, has a distinct identity—one that meets the criteria cited here.

Some of the factors that have most affected the records center and have advanced its role in the information field include: changes in document format, automation, legislation, and personnel concepts. Paper records have been joined by magnetic tapes (and their related formats) and microfilm. These have required adjustments in the traditional shelving equipment used in centers and in the temperature and humidity levels of the past. Storage, in addition to tapes and disks, now includes aperture cards, fiche, jackets, and other microforms. The latter now require a greater array of viewing and searching equipment. This has greatly increased the

searching, locating, and producing capability of the records center. Microfilm has enabled many records centers to become central information libraries for the preparation of companywide technical and management reports serving multiple locations throughout a wide geographical area. Rather than creating problems for the records center, changes in records format have proven its adaptability to technical advances. Changes in document format will significantly affect the volume of records in the records center, but the ever-increasing demands for information generation (internal as well as external) and information availability guarantee the center's role in the orderly maintenance and disposition of records. The ratio of one format to another may very well vary, but the need to manage them remains a constant.

While the records center provides for the housing of automation documentation, it now also utilizes the computer for its management. Based upon a careful feasibility study, a computer application can be justified to handle many of the time-consuming functions involved in the control and analysis of records center activities. On-line systems are beginning to appear, giving the center instant ability to update and search its holdings. Maximum benefit, of course, is derived when a mechanized program covers both retention scheduling and the records center, for the two are, by necessity and practicality, closely related. This joint use also provides the justification for smaller organizations to automate. Their records center volume, in itself, may preclude the economical use of such an approach. Prior to making a decision, both large and small companies should survey other organizations to determine the volume points of conversion and implementation costs. Under certain conditions, a manually controlled center may be just as efficient and economical as an automated one.

An automated program can provide advantages to the center: space control and assignment, cross-references, destruction lists, reference analysis, schedule audits, and computer-output-microfilm (COM) printouts. A significant feature of this advancement in information records center operations is that it has also helped to bring together records management personnel and data processing personnel. Each staff provides a valuable service in taking care of the other's needs.

The curtain has risen in the United States on freedom of information and privacy. Recent legislation enacted by the United States Congress, which is gradually spreading to other governmental agencies, will have a major bearing on the field of information and records management. Records repositories must examine and continually check their accessibility practices to make certain that they are in line with the overall company policy and procedures in this area. The physical features of records centers are also being challenged by U.S. federal and local safety and protection regulations. The records center today has an important role in what is going on in the front office. This, by far, is the major advancement in its productive history.

The records center has also become a training ground for records management personnel. No longer is it necessarily a dead end. The records management occupational cluster today involves a multitude of positions, and the records center clerk, given enough incentive, can see many opportunities beyond the shelves and boxes. Educational opportunities abound, and the recent Association of Records Managers

and Administrators Certification Program gives a purpose and objective in pursuing records management as a career. The items covered—formats, automation, legislation—give the records center employee a key insight to the things that make a full-fledged records management program go. His awareness of these factors makes him the perfect emissary for good records care when he moves on to another organization, even if it isn't in the records management field.

Whether it be a governmental, private, or commercial facility; whether it serves inactive, vital, or archival records; below or above ground, the center is clearly a tangible aspect of records planning—a showcase that depicts a discipline worthy of management's attention and one that offers a practical means for reducing costs.

RECORDS PROTECTION

Disaster planning is an organized program of preparedness against man-made, natural, or accidental disasters. Such preparedness requires attention to the protection of manpower, resources, and records. To ensure against losses, organizations will obtain insurance on life and property, for which premiums are paid. Management's "premium" for records protection is a vital records program, and in order to minimize that premium, such a program must be limited to absolute essentials. Records series must be carefully examined to determine which ones are needed: (*a*) to resume or continue operations; (*b*) to protect the legal and financial ability of the operations; and (*c*) to protect the rights of outside interests and employees.

Following a decision on which records are to be protected (usually only 4–6% of all records), the most economical method of protection must then be considered. These can include:

Built-in Dispersal: protection by the normal distribution of records, which does not necessitate the creation of additional records

Improvised Dispersal: utilization of existing records which might normally be discarded after use, such as records which are needed solely for posting purposes and are then discarded

Evacuation: original, but older, records considered vital are removed to a more secure location

Vaulting: storage of vital records in a vault on the premises of the operation

Duplication: creation of an additional copy of the vital record, to be sent to a vital records area or center

The use of vaults is one of the most neglected areas of records protection, for most often such locations are used for other functions as well—housing supplies, duplication equipment, or day-to-day files—which necessitate constant use of the vault and thus increase its exposure to a fire or other mishaps.

Like records centers, vital records repositories may be operated by an organization itself, or outside commercial facilities may be used. Through the years, these have grown to such an extent that there exist today, in the United States, organized associations of underground security storage companies.

As with retention, records protection presents a serious challenge as it regards the continuation of computer operations, for a considerable amount of information is now recorded on this medium. More and more of the cumulative knowledge of government and business today is being reduced to machine-sensible devices. The loss of a single magnetic tape could mean the loss of a complete collection of personnel records, receivables, library holdings, or key indices. Such a loss may be attributed to theft, accidental damage, fire, flood, or the like. Utilizing one of the protection methods given above, the records program must include a system to protect the tapes and their related documentation. One of the most successful approaches to the protection of tapes has been the "protective cycle" approach. This utilizes three generations of tapes (son, father, grandfather) in a rotating format, with the grandfather tape being dispersed to a remote area and replaced periodically with the father tape. A paperless society does not eliminate the need for a vital records program.

MICROFILM

Alongside the elements previously mentioned, the science of micrographics is equally involved in the records management cycle. In any well-organized records management program today, you should find the following procedural reference to the use of microfilm:

> It is the policy of this organization to utilize various microforms as part of its normal course of business for Records Management purposes. Such microforms may be prepared as replacements for and/or in lieu of hard copy, and are retained in accordance with company approved retention schedules. The micrographic processes used on such film are to be accomplished in such a manner as to assure meeting the specified retention requirements (*3*).

Microfilm is recognized worldwide as a practical and effective photographic technique for the miniaturization of information—a technique that is, in terms of importance, capable of saving valuable space, protecting essential information, and processing information. The latter use is most important because it involves a total systems concept. Roll film for archival purposes has been supplemented by other microforms to meet every possible need. We have applied cartridges and cassettes to managing manuals and catalogs, film jackets to medical and personnel records, aperture cards to engineering drawings, and microfiche to technical reports and publications, to name but a few advances.

The marriage of the computer and micrographics has produced COM (computer-output-microfilm, or as some have called it, Complete Opportunity for Miniaturization). Output speeds of 2,000 lines per minute on impact printers are being replaced by COM outputs of 20,000 lines per minute, and greater speeds are promised. COM has contributed the greatest incentive to microfilm acceptance because it has become a management-recognized system.

So great has been the impact that even on-line computer systems are being converted to COM. Take this case study: because of an existing computer base

involving several hundred million bytes of on-line storage and the need for "current" and "on-demand" reference requirements, a system covering group insurance records was installed. It consisted of four video display terminals, one typewriter terminal, and supporting communication and phone lines—an expensive system. As other, more critical on-line files expanded and computer costs increased, a means had to be found for recovering on-line storage and for reducing computer costs. COM-generated microfiche was examined to determine if it could do the job. The nature of fiche—namely, its local and high density storage features—made it possible to provide this particular insurance group with essentially the same capability as on-line facilities, through overnight requests on microfilm rather than on real-time video displays. There is no longer any down-time problem, and the 16 insurance clerks involved no longer share their inquiry equipment; each has an individual viewer—a better operation and with a $70,000 annual saving. A review of the whole system also resulted in the conversion of individual patient case records to microfilm jackets. This entire system is a prime example of a totally integrated approach to systems, involving several disciplines.

Conclusion

Paper formats do not provide all the answers to systems needs. Neither do micrographics or computers. Each system requires a thorough analysis. An appreciation of all possible approaches will at least give us the opportunity to come up with the right decisions.

The elements of records management discussed here represent the mainstays of the records management field. Their proven and practical techniques have enabled management to maintain an orderly control of information sources from the day-to-day handling of paper documents to the most sophisticated information-generating machines. Unfortunately, many organizations have jumped immediately into the miniaturized or computerized environment, without regard for the unresolved systems left behind. These unsolved manual or paper problems are therefore bypassed for the prestige of the more advanced systems. Yet the problems continue to exist; and they grow more troublesome as time passes, until they eventually become such an obstacle that they can no longer be ignored without disruption of the new system.

This article has attempted to present an overview of the practical aspects of records management. It is agreed that these elements provide the involvement and controls necessary to bring the past together with the present, in order to meet the future administrative, legal, and historical records needs of government, business, and industry.

One doubts that it is possible, or even desirable, to stem the information explosion. But we do know that we can get the maximum use out of *what we have* and *what we are generating* within reasonable cost parameters, if we adopt a fully integrated records management program as discussed herein, and if we interface with computers for mutual benefits. *Yes,* the use of paper records is waning. *No,* the paperless society is not just around the corner. That remains an objective worthy of our

continuing efforts and it is within reasonable reach if we keep our disciplines working harmoniously and in balance.

REFERENCES

1. Records Management Act, U.S. P.L. 94–575.
2. *The INFORMMA*, 2, 1 (1976).
3. Lockheed Corporation, Burbank, Calif.

SELECTIVE BIBLIOGRAPHY

This suggested list consists of basic general and specific textbooks and reference sources; annotations are included. Bibliographies of articles of current interest and those of articles published in the *Records Management Quarterly* (the official publication of the Association of Records Managers and Administrators) are periodically indexed and published in the *Records Management Quarterly*.

General

Benedon, William, *Records Management*, Prentice-Hall, Englewood Cliffs, N.J., 1969.

Records management is the application of systematic analysis and control to records required in the course of operating a business. It includes the creation, maintenance, and protection of records as well. Each subject is treated in depth, needs are explored, objectives are established, survey guidelines are explained, operating procedures are detailed, and results are measured.

Blegen, August H., *Records Management Step-by-Step*, Office Publications, Inc., Stamford, Conn., 1965.

Describes a system for efficient collection, inventory, and retrieval of company records; how to set retention schedules; how to supervise and operate a records management program; and it includes a rundown on costs for equipment, supplies, and personnel.

Jones, H. G., *The Records of a Nation*, Atheneum, New York, 1969.

Discusses in historical detail and with accuracy the development of the National Archives and Records Service and the role and importance of records management in the federal government. Includes an excellent description of the growth and importance of the *Federal Register*.

Knox, Frank M., *The Knox Standard Guide to Design and Control of Business Forms*, McGraw-Hill, New York, 1965.

Presents a set of procedures designed to reduce clerical costs and simplify paperwork; also how to streamline procedures and improve management reports.

Lewis, C. M., and W. H. Offenhauser, Jr., *Microrecording*, Interscience, New York, 1956.

Discusses the relationship of microfilming and micrographics to the broad field of records management and discusses in detail the application of proven techniques.

Maedke, Wilmer O., Mary F. Robek, and Gerald F. Brown, *Information and Records Management*, Glencoe Press, Beverly Hills, Calif., 1974.

The management and control of information and records is today's most important management problem. This complete textbook discusses and explains in detail the records control related to active and inactive records and the creation of records and micrographics and reproduction; also contains study questions and project suggestions.

National Association of Credit Management, *Manual of Commercial Laws*, New York, 1974.

A comprehensive, valid reference source with citations pertaining to the Uniform Commer-

cial Code and the effect of laws, statutes, rules, and regulations pertaining to commercial transactions in the states of the Union; a most helpful guidebook in determining retention periods and conducting retention analyses.

National Microfilm Association, *Admissibility in Evidence of Microfilm Records,* prepared by Nixon, Hargrave, Devans and Doyle, Rochester, N.Y., for Eastman Kodak Company, National Microfilm Association, Silver Spring, Md., 1971.

Authoritative, documented presentation of essentials of the law.

National Microfilm Association, *Micrographic Systems,* prepared by Daniel M. Costigan, Silver Spring, Md., 1975.

Reflects the rapid and expanding growth of microfilm systems application. This book presents in useful format the scope of micrographics in terms of hardware, systems, and technical standards and applications; contains useful bibliographies.

Place, Irene, E. L. Popham, and H. N. Fujita, *Fundamental Filing Practice,* Prentice-Hall, Englewood Cliffs, N.J., 1973.

Presents in very useful detail the practical essentials of filing systems and file hardware and supplies; contains study questions and project suggestions.

Schellenberg, T. R., *The Management of Archives,* Columbia Univ. Press, New York, 1965.

An excellent discussion of archival management.

Weaver, Barbara N., and Wiley L. Bishop, *The Corporate Memory,* Wiley, New York, 1974.

Considers the records management problem from the corporate office point of view and discusses the role and importance of records management practices and techniques in relationship to the "decision makers in modern business."

Records Management Periodicals and Pamphlets

Administrative Management, 212 Fifth Avenue, New York, N.Y. 10010.

American Archivist, University of Illinois at Chicago Circle, Chicago, Ill. 60680.

Information and Records Management, 250 Fulton Avenue, Hempstead, N.Y. 11550.

Microfilm Techniques, 250 Fulton Avenue, Hempstead, N.Y. 11550.

Modern Office Procedures, 614 Superior Avenue West, Cleveland, Ohio 44138.

The Office, 73 Southfield Avenue, Stamford, Conn. 06904.

Records Management Quarterly (Official Publication of the Association of Records Managers and Administrators), P.O. Box 281, Bradford, R.I. 02808.

The National Archives and Records Service (NARS), of the General Services Administration, Washington, D.C. 20402.

Publishes an excellent series of pamphlets related to the broad field of records management, which includes such titles as *Applying Retention Schedules,* 1961 FSN 7610–634–5022; *Federal Records Centers,* 1967 FSN 7610–298–6904; *Files Operations,* 1964 FSN 7610–985–6973; *Protection of Vital Records,* 1966; and *Subject Filing,* 1966.

WILLIAM BENEDON

RECORDS PROTECTION

The paradoxes of records protection are well highlighted by three vignettes from the writer's own experience. As New York State librarian and assistant commissioner of education, beginning in 1945 he presided over the New York State Library, whose collections of rare books, manuscripts, and archives still showed the serious gaps caused 34 years before by one of the world's greatest library fires. The library had been housed in a great stone building of Civil War vintage; but pipe channels, ventilating ducts, and elaborate wood paneling proved no barrier to the spread of fire. The fire burned for several days, causing metal shelves to buckle, which spilled and spread their contents to be rapidly consumed. Many records of colonial days were in large bound volumes on wooden shelving, and as a result these volumes absorbed water and swelled up tight on their shelves. Few of the wooden shelves collapsed, because wood does not lose its strength as rapidly as steel under such circumstances. Thus many of the precious colonial records survived, albeit often badly charred on their edges.

Partly as an aftermath of this disaster, the Education Department added a supervisor of public records, whose duty it was to inspect the conditions and promote the security of official records in government offices throughout the state. One of the bizarre conditions he discovered was in a rural county seat. Under the excitement of wartime conditions it had been determined to move some of the more valuable county records to a place of greater security than the century-old court house afforded. A reasonably thrifty solution seemed to be to build a vault-like area with cinder blocks in a corner of the spacious highway department garage.

The records were duly transferred, and some space was left for future additions. But it was a time of scarcity and the highway department looked with covetous eyes on a place of security in which to store their supply of truck and automobile tires. Soon the tires joined the records. A while later someone, concerned lest subversives or other unauthorized persons might get their hands on the highway department's supply of blasting caps and dynamite, found a few square feet in the same vault to store the explosives. Whatever the original image of security for records, it is clear that the slightest mishap in this mix of flammables and explosives would be fatal to the records. The sense of security derived from the wall of cinder blocks and from a stout door with a good lock was basically false.

Thirty years later, as these words were being written, a local upstate New York newspaper carried the headline: "Incinerator to Become Warehouse for Town's Equipment, Records." Here again was a violation of virtually all the known and approved principles of records protection, although obviously the incinerator had long proven itself to be a "fireproof" building.

Records Are Essential in Modern Life

As our civilization grows increasingly complex, our dependence upon records, for even our daily existence, is becoming increasingly absolute. Yet the media or

substances which form our records are becoming increasingly fragile and vulnerable. The ancients started the trend, moving from carvings on stone slabs to impressions on clay tablets, then to ink on papyrus. Today we have microfilm which will deteriorate at temperatures far lower than those that would char paper, and magnetic tapes where the slightest distortion will cause trouble.

The rapidly growing volume of records and the gross problems of adequate storage space constitute perverse threats to the records system itself. Fortunately it has been established that many records are actually ephemeral and have a useful or essential life that is relatively short, to be measured in months or a few years. The essential contents may be summarized or condensed and transferred to secondary series, and after a set period of time further condensations or summaries may be made. Then the originals may be scheduled for prompt destruction, thus greatly reducing the bulk and the hazards. Attempts to reduce the gross volume for storage by microfilming have proven to be extremely expensive, and the film medium has been little if any easier to preserve permanently than the paper originals.

On the other hand, historians and archivists rightly insist that some records have long-time, if not permanent or perpetual, value beyond the official or administrative purposes for which they were created originally. The information that such records may contain is an important part of our history—our national heritage. They have ceased to be useful for the transaction of business, but they have become valuable because they are illustrative of the times in which they were made.

A few records have become showpieces, no longer useful for the information they contain. Such is the original of the Declaration of Independence. If this original were lost or destroyed, the daily business of the nation, or even the writing of its history, would be unaffected; there are millions of copies of the Declaration, many in excellent facsimile. But we do treasure the hallowed original, and keep it enclosed in super-protection, safe from all but an overwhelming catastrophe.

There are four categories of records, subject to four stages or degrees of protection: (*a*) records used in current business, usually maintained in the offices where they are received or made, and subject to relatively frequent consultation; (*b*) records no longer current, but referred to occasionally, probably stored away from the office of origin for economy; (*c*) records of permanent or archival value, usually in special storage; and (*d*) permanent treasures, receiving special treatment. Of course, these categories apply not only to national, state, and local government papers but to corporation records and even to personal or family collections as well.

Current records: There are appropriate measures for the protection of records in daily or frequent use in their offices of origin. However, in this case security for records must be part of an overall plan that provides security for the office personnel also, and permits efficient operation. Such offices are widely scattered and exist in greatly differing conditions so that it is difficult to generalize. Usually the total bulk of the records is relatively small.

Records maintained for occasional use: Because office space and steel files are expensive, records which reach this second category are almost invariably moved to cheaper storage space and cardboard containers, and they are serviced by a relatively small staff. Here protection becomes easier to define and provide. Ulti-

mately, the greater portion of these records may be scheduled for destruction, while selections may be made for transfer to permanent preservation.

Archival records: The bulk of those materials classified as having permanent or archival value is relatively small. Special arrangements for storage and use can be made. It is economically and otherwise feasible to provide higher levels of protection.

Treasures: Protection of great treasures must be designed specifically for the nature of each individual item itself, and it must also take into account the place of safekeeping and display.

The hazards to records are numerous, and they vary with the medium: theft, malicious destruction, neglect, atmospheric conditions, insects, rodents, inadvertent destruction, fire, and flood. Theft and malicious acts can be controlled to a great extent by proper office security. Excessive dryness that causes paper or film to become brittle and crack, and excessive humidity that causes mold or decay are relatively easy to control in modern buildings. Good housekeeping will keep insects and rodents to a minimum, and records transferred to well-equipped records centers may be fumigated. Neglect and inadvertent or mistaken destruction can be controlled by good supervision, through the provision of a well-thought-out and planned schedule for retention or destruction. Flooding can be prevented by the initial site selection. Fire, of all the hazards, can be the most destructive in the greatest quantity, yet it can be easily prevented or restricted by adequate measures. For this reason, fire protection is emphasized here.

The Threat of Fire

The use of stone vaults, or "muniment rooms," for important records began centuries ago. The building of heavy masonry or reinforced concrete vaults, with fire- and burglar-resistant doors, is a recent development. Leadership in the development of modern standards for records protection has been taken by the Committee on Protection of Records of the National Fire Protection Association (NFPA). The committee was organized following a very destructive fire in the general office of the Chicago, Burlington and Quincy Railway in Chicago in 1922. Although the building was "fireproof," the business records certainly were not. Subsequently, with the collaboration of other technical committees of the NFPA, and with the participation of the Underwriters Laboratories, the committee developed a comprehensive and detailed standard for protection of records in vaults and file rooms, which has appeared in four successive editions (*1*). These vaults, however, are utterly inadequate to house the vast accumulations of permanent records for our governments or our large corporations, because of the heavy and expensive construction required, and because there is a standard size limitation on each one (a maximum of 5,000 cubic feet).

To provide for such great bulks of records, a new school of thought for records storage has arisen, led by three people: Harold E. Nelson, until recently the chair-

man of the Record Protection Committee (formerly director of the Accident and Fire Prevention Division of the U.S. General Services Administration, and now director of the Center for Fire Research, National Bureau of Standards); the secretary of the Record Protection Committee, Forrest V. Weir, of the National Archives and Records Service; and Thomas E. Goonan, Fire Safety Engineer, General Services Administration, who is the newly appointed chairman of the committee.

To meet the need for guidance in planning for very large collections of records, and to supplement the booklet primarily devoted to vault construction, the NFPA committee developed the *Manual for Fire Protection for Archives and Records Centers*, which was approved by the NFPA and published in 1972 (*2*). Although it does not have the status of a "standard" or "recommended practice" in the NFPA hierarchy, it is full of authoritative information. Among the subjects discussed are: fire prevention programs, methods of storage, development of fire in various situations, detection of fires, means of extinguishing fires (especially automatic sprinklers), other extinguishing systems such as carbon dioxide and halon, and specifications for construction of archives and records center buildings.

As a result of much experimentation, and of occasional experience with major fires, it has become possible to compute quite accurately for a given situation the amount of fire load, the amount of energy released by combustion, and what the energy is likely to do if not released by venting or absorbed by cold water. Actually, this may be considered a branch of the science of fire prevention engineering. One test of a "science" is the ability to predict what will happen, given a specific set of circumstances. That test was met with almost uncanny accuracy in 1972 when Goonan predicted what would happen if a fire got started in the Military Personnel Records Center (MPRC) at St. Louis, Missouri (*3*).

The center was housed in a six-story, reinforced concrete building, 1,274,000 square feet in area, built in 1955. There had been a rash of fires, mostly believed to have been set. Goonan predicted that if a fire got started and was not promptly discovered, it would quickly be beyond the capability of the occupants to extinguish, and ultimately beyond the capability of the local fire department. He recommended installation of automatic sprinklers and presented a series of probability curves as to the extent of fire under various conditions.

Shortly after midnight on July 12, 1973, a fire was discovered on the top (sixth) floor of the St. Louis Military Personnel Records Center, and it burned out of control for two days. Severe structural damage was done to the top floor and roof of the building, and most of the 21.8 million records on this floor were destroyed. These records covered Army personnel discharged between 1912 and 1959, and Air Force discharges from 1947 to 1963.

Six persons had been working on the sixth floor. The last left at 12:05 A.M. None reported smelling smoke or seeing a fire. At about 12:15 A.M. a passerby observed fire through windows on the sixth floor and so reported to the officer on duty at the entrance. Within a few minutes the local fire companies responded and found the heat so intense at the sixth floor stairway door that they could not enter. They withdrew and proceeded to attack the fire from outside, through the windows. Soon the concrete roof structure began to shift and it partially collapsed. The fire con-

tinued to burn until the morning of July 16. Forty-two fire departments had fought the blaze, with 11 engines, 6 ladders, 1 platform, and 362 men. It was immediately apparent that had the fire started on any of the lower floors, all the floors above would have been involved (*4*,*5*).

GSA Advisory Committee Report

In part as a result of the Military Records Center fire, and because of a few others (far less serious) in other centers maintained by the General Services Administration (GSA), an advisory committee was established in 1974. Its purpose was to gather the best expertise and latest thinking on fire protection for records, to be used in correcting existing deficiencies and in planning new centers. Representatives were included from the fields of professional archivists, librarians, historians, records management, architects, fire protection engineers, and fire fighters.

The committee report was published in April 1977 (*6*). Without doubt it contains a most comprehensive study of records protection, and it includes full recommendations for the National Archives and Records Service for design and equipment of archives and records centers. Many of the recommendations have already been adopted and implemented in some centers and in the National Archives.

The most emphatic, and to some the most radical, of the recommendations is that for the complete installation of automatic sprinkler systems. A new concept of "maximum acceptable risk" is presented quite effectively and convincingly. A review and abstract of the report follows. Much of it is equally applicable to library bookstacks.

The charge by the administrator of the GSA to the advisory committee included: (*a*) a review of the present state of the art in protection of records in archives and records centers, including structural design, methods of records storage, protective personnel, fire protection systems, and fire fighting; (*b*) a determination as to whether adequate information was already available or whether further research was necessary; (*c*) a review of the fire safety objectives of the GSA for various groups of materials; and (*d*) proposals for revisions and alternatives to current standards and practices. The committee began by reviewing the federal records management system which has grown up in response to the "paper explosion" that began in the 1930s.

The present system is based on the principle that it is not economically practical or administratively sound to retain all federal records in office space. The result has been the development of a network of records centers, which originated under the aegis of individual agencies, and which eventually culminated in the GSA system of records centers, now managed by the National Archives and Records Service (NARS). The centers are facilities designed to provide economy in storage of semiactive and inactive records which must still be retained to meet statutory requirements or to protect the rights and interests of the government and its citizens, and to provide efficiency in retrieval of those records when needed. At the same

time, records are maintained under controls that provide for scheduled movement from federal offices to records centers, and, eventually, for planned destruction or transfer to archives for permanent preservation.

To achieve these objectives, the records centers use inexpensive storage equipment. Corrugated cardboard cartons hold records in 1-cubic foot units and are stored on standard steel shelves 14 feet high, a height impractical and unsafe for an office environment. Approximately 5 cubic feet of records are stored on 1 square foot of floor space, compared with 1 cubic foot of files to 1 square foot of office space. The cost of the cartons and the shelving is far less per unit than that of steel filing cabinets. Figures submitted by NARS show the continuing need for such storage space: the net volume of records in centers is growing at a rate of 500,000 cubic feet annually (the capacity of one medium-sized records center). At the same time, there is a rapid growth in the acquisition of nonpaper records in micrographic or magnetic tape forms.

The archives stand at the apex of the records system. They are the records which have sufficient historical or other value to warrant permanent preservation. The National Archives was created by Congress in 1934 to give such irreplaceable materials sophisticated processing and maximum protection. Because the National Archives Building in Washington lacks sufficient space, and because of the policy of maintaining certain regional archive collections, over 600,000 cubic feet of archival materials are housed in regional records centers.

After examination of data from several experiments conducted during September and October 1974 at the Factory Mutual Research Laboratory in Norwood, Massachusetts (and from numerous other reports), and following extensive discussion among committee members and several open hearings, a series of findings and recommendations was agreed upon and reported. A brief summary of the major points follows.

First, and foremost in priority, it was concluded that a complete automatic sprinkler system, with an adequate water supply, is the most effective fire disaster prevention system. Fire detectors alone are of limited value. Detection alone, without a sprinkler system, only indicates that there is a fire. An automatic sprinkler system acts immediately to suppress the fire, while it simultaneously activates an alarm that there is a fire. A fire department should never be considered the first line of defense. The difficulties of bringing hose streams to play upon the seat of a records fire may be overwhelming. Damage from the hose streams to unburned records is far greater than that from sprinklers. The findings state: "In this context the value of the automatic sprinkler as a fire control mechanism cannot be overemphasized." It has been reported by GSA that all centers, including the National Archives Building itself, are now provided with automatic sprinkler systems.

The importance of compartmentation or subdivision of large areas with fire walls and of adequate structural design is emphasized in the report. Work spaces and staff quarters should be properly separated from the storage areas. Obviously, access should be limited to accredited personnel, and smoking should be prohibited. Future records centers should be limited to a height of one story.

Further study was recommended for the determination of the fire development rate and toxicity of nonpaper records and containers, and to assess their impact on fire protection programs. The report also recommended that new developments in storage containers and their placement on shelves should be monitored and evaluated.

The report describes and applies a new concept or measure, "maximum acceptable risk," for evaluating various means of preventing fires or reducing spread and loss once an ignition occurs. Graphically, probability of success or failure in limiting the extent of fire impact is plotted against cubic feet of records involved, both on logarithmic scales. It is recognized that there is no absolute state of fire safety, and that any ignition will produce some degree of damage. Whereas the cost of approaching absolute safety for every record would be astronomical, many measures can be taken in proportion to the intrinsic value of the records. Fire is a dynamic condition in which the increasing threat with growth of fire must be countered with increasing capabilities of fire protection systems. Obviously there is a higher degree of acceptance of a small potential loss than would be the case in a large incident. The graphic presentation provides a management tool for stating the minimum level of safety to be sought in each records center.

Priority is, of course, assigned to the two treasure rooms in the National Archives Building. Here the goal is that, in case of fire, there will be at least a 98% probability that not more than 30 cubic feet of treasure will be damaged, or a 99.5% probability that not more than 500 cubic feet will be damaged. Presumably most, if not all, of the damaged material could be restored.

For ordinary records the goal is a 98% probability that no more than 200,000 cubic feet of records will be damaged, or a 99.7% probability that no more than 200,000 cubic feet will be destroyed. If, as specified in the present standard, no more than 200,000 cubic feet (40,000 square feet of floor space) may be contained in one unit (protected by a major barrier to fire development, e.g., a fire wall), the probability that more than 200,000 cubic feet will not be damaged rises to 99.9%. Or, conversely, there is only one chance in a thousand that the fire will break through the barrier. Another reading from the curves shows an additional statement of objective: in case of fire there should be at least an 80% probability that not more than 100 cubic feet of records will be lost.

The committee endorsed this method of evaluation of the efficacy of the standards of fire protection for federal archives and records centers, subject to certain modifications by the committee.

An important byproduct of the MPRC fire was the development and operation of a new, large-scale records salvage system, using "vacuum-heat cycling." By this method some 90,000 cubic feet of records which were water-soaked, but not extensively burned, were saved (*5*). The success of this new technology, originally developed as part of the NASA space research, reinforced the conclusion of the committee that the automatic sprinkler system currently is the most effective fire disaster prevention system. Following the MPRC fire, all the records which survived the fire, regardless of the degree of wetness, were salvaged.

Vaults and File Rooms

For modest quantities of highly valuable or irreplaceable records (not to exceed 5,000 cubic feet) the storage vault is recommended. Standards for it have been developed by the NFPA Records Committee (*1*). The vault is essentially a room within a general-purpose structure, isolated by heavy walls, floor, and ceiling, and entered through one special door. It is usually provided with alarms for detecting unauthorized intrusion, and smoke or heat, which may originate from fire.

Because of the strictly limited access, small size, and tight enclosure, the chances of fire starting within a vault are small. Some, however, are protected with carbon dioxide or halon systems. The chief danger comes from fires in the surrounding building, which may eventually overheat the vault contents or cause collapse or cracking of the vault structure. Detailed standards are offered to ensure that vaults will be protected from external forces. Of course, there should be no openings in the walls for any purpose other than entrance. Vault doors must meet well-defined standards as to resistance to passage of flame or heat for specific periods of time. They must also withstand the stress of sudden application of cold water when the exterior of the door is highly heated.

Similar, but less rigid, standards are prescribed for "file rooms," where space requirements exceed the 5,000 cubic foot maximum for vaults. Such rooms, not to exceed 50,000 cubic feet, should be in fire-resistive buildings, properly isolated. Automatic sprinklers are recommended.

On the smallest scale, detailed standards are available for insulated records containers and fire resistant safes.

In some instances, duplication by microfilm and storage of the film in a safe place elsewhere may be the surest and least expensive means of preserving essential records. There are a few old salt mines and iron mines commercially operated as safe records storage places; however, these measures are feasible only for relatively small quantities.

Summary

In brief review, there are five principal elements in the protection of records, and these are almost equally applicable to books in libraries (*7*):

1. The environment: The structure should be "fire resistive." None are absolutely "fire proof." Even if a building is "fire proof," its contents can burn, as in a stove.
2. Control of access: Access to records storage areas must be kept to a minimum of authorized persons, and this must be closely supervised. "No smoking" and other rules must be strictly obeyed.
3. Methods of storage: While storage in steel filing cabinets may be safer, the cost of storing tremendous quantities of records this way is prohibitive.
4. Early detection of fire is essential. This can be done by personnel, smoke detectors, and heat detectors.
5. Prompt extinguishment is equally essential. The automatic sprinkler is set off

by heat build-up. Immediately, it both transmits an alarm and begins to extinguish the fire. The prompt action of one or two sprinkler heads will usually stop the fire. Far less water will be used and far less damage will be done than by the fire hose.

The principal sources of information for this article are the General Services Administration committee report and its appendices, and the National Fire Protection Association publications.

REFERENCES

1. National Fire Protection Association, Committee on Record Protection, *Standard for the Protection of Records*, NFPA No. 232–1975, NFPA, Boston, 1975, 93 pp., includes illustrations and diagrams.
2. National Fire Protection Association, Committee on Record Protection, *Manual for Fire Protection for Archives and Records Centers*, NFPA No. 232AM–1972, NFPA, Boston, 1972, 26 pp., includes diagrams.
3. Thomas E. Goonan, *A Report of a Visit to the Military Personnel Records Center, St. Louis, Mo., October 24–25, 1972*, Public Buildings Service, Washington, D.C., 1972, 5 pp., includes diagrams.
4. "Military Personnel Records Center Fire," *Fire J.*, **68**(3), 5–9 (May 1974); and **68**(4), 65–70 (July 1974).
5. Walter W. Stender and Evans Walker, "The National Personnel Records Center Fire: A Study in Disaster," *Amer. Archivist*, 37(4), 521–549 (October 1974).
6. U.S. General Services Administration, Advisory Committee on the Protection of Archives and Records Centers, *Protecting Federal Records Centers and Archives from Fire*, General Services Administration, Public Buildings Service, Washington, D.C., 1977, 202 pp., includes illustrations and diagrams.
7. National Fire Protection Association, Committee on Libraries, Museums and Historic Buildings, *Recommended Practice for Protection of Library Collections from Fire*, NFPA No. 910–1970, NFPA, Boston, 1970, 28 pp.

CHARLES F. GOSNELL

REFERENCE BOOKS

Basic Concepts

NATURE OF THE REFERENCE BOOK

"Let's look it up!" How often during a day do we hear that expression? Certainly more often today than centuries earlier, when illiteracy was far more prevalent than it is today. We hypothesize that occasions to "look things up"—or to consult reference books—increase in direct proportion to one's education; the less-educated person seldom consults sources for information; and, ironically, the more educated one becomes, the more frequently one needs to locate information through the use of the reference book.

To test our hypothesis, consider the question that you, a formally educated person, have in your mind as you begin to study this topic: What is a reference book? Consulting an appropriate source, the *A.L.A. Glossary of Library Terms*, we find that a reference book is:

> A book designed by its arrangement and treatment to be consulted for definite items of information rather than to be read consecutively (*1*).

The reader might better comprehend the essence of the reference book if he or she compared two comprehensive works: *War and Peace*, by Leo Tolstoy, and *The New Encyclopaedia Britannica*, now in its 30-volume 15th edition. Many a reader has curled up contentedly in his favorite easy chair with an apple in one hand and the great novel in the other, absorbed by the question, "Can this simple girl from St. Petersburg find happiness with one of Russia's wealthiest nobles?"—because, when dislodged from its foundation of historical events and philosophical speculation, *War and Peace* is basically a love story. The determined reader is rewarded by learning that Natasha eventually gets her man, Count Pierre Bezukhof; however, we cannot imagine anyone persisting through today's *EB*, although the Dutch–American journalist Pierre Van Paassen claimed to have read through all 24 volumes of an earlier edition. We hope that he found all volumes readable, including the 24th. Tolstoy's work, being a novel, was designed to be enjoyed for its plot from cover to cover; the *EB*, being a reference work, was designed to be consulted repeatedly for specific information. Lest the reader be misled by an overly simplistic concept of the nature of a reference book, we wish to emphasize that on occasion even a novel can be considered a reference book; for example, if the reader wished to locate a favorite passage, such as Prince Andrei's famous advice to Pierre concerning marriage, *War and Peace* would temporarily become a reference book. The prince's advice:

> "Never, never get married, my friend! This is my advice to you. Do not marry until you have come to the conclusion that you have done all it is in your power to do, and until you have ceased to love the woman whom you have chosen, until you have seen clearly what she is; otherwise you will make a sad and irreparable mistake. When you are old and good for nothing, then get married. . . . Otherwise, all that is good and noble in you will be thrown away. All will be wasted in trifles. Yes, yes, yes! Don't look at me in such amazement. If ever you have any hope of anything ahead of you, you will be made to feel at every step that, as far as you are concerned, all is at an end, all closed to you, except the drawing-room, where you will rank with court lackeys and idiots. That's a fact! . . ."
>
> "If you could only know what all these distinguished women in general amount to! My father is right. Egotism, ostentations, stupidity, meanness in every respect—such are women when they show themselves as they are. You see them in society and think they amount to something, but they are nothing, nothing, nothing! No, don't marry, old fellow, don't marry," said Prince Andrei in conclusion (*2*).

And we can say in conclusion that a reference book is a book published primarily for consultation rather than for continuous reading.

ORIGIN OF REFERENCE BOOKS

The beginnings of reference books may be traced to man's earliest attempts to record thoughts, concepts, ideas, and events. The visual may be said to have originated when man first sketched the outline of an animal that he wished to hunt. As he returned to look again at his sketch he became aware of an important fact: the sketch had the power to refresh his memory of his original concept. With that awareness, the concept of the reference book in its most rudimentary form may be said to have arisen. Other precursors of reference books soon followed the visual.

Early man recorded routes to good hunting and fishing areas, and maps began. Man recorded his accomplishments, and biographical sources arose. The *Gilgamesh Epic*, for example (completed about 2,000 B.C.), tells the story of a legendary Babylonian king and the biblical flood. Prototypes of almanacs could be observed in ancient Egypt: The Nile, endless, pulsating, throbbing with life! A source of life, but unpredictable! The Nile overflowed its banks. The Egyptians recorded the event. The Nile overflowed again, and the phenomenon was recorded once again. As the years progressed, the Nile continued to overflow, and man continued to record the event.

The Egyptians eventually noticed a pattern in the timing of the floods. By comparing their records and the overflowing of the Nile, the Egyptians noticed a correlation between the two. They then began to refer to the records for a prediction of the event, and the principle underlying almanacs, another type of reference book, arose. Compilation of a run of these almanac-type records eventually enabled ancient Egyptians to predict the Nile's overflow.

Almanacs, biographical sources, maps, and all early reference sources recorded a great deal of information. Eventually, man yearned for a single work which would synthesize the information in these varied sources, and the principle underlying encyclopedias was born. From it came encyclopedias, such as the works of Aristotle, Varro, and Pliny; and reference books may be said to have had their historical beginnings in these works, since these texts still exist, at least in fragments.

Reference Bookmanship

DEFINITION

Using reference books is a common practice, but the skill of using information sources to their utmost is not so common. The senior author of this article [Shores] originated the concept of reference bookmanship to denote the ability to use reference books skillfully and creatively for the purpose of deriving the full information potential inherent in them. It implies a knowledge of reference books so intimate that the user knows fully their points, feels an excitement when he encounters a well-designed reference book, and develops a respect for certain reference books for their accuracy and dependability. Anyone who has the reference book habit has the potential for developing reference bookmanship, but the skill can be mas-

tered only through lengthy contact with reference books and constant practice in their use.

Further evidence of that potential is obvious if one experiences an excitement over the sight, feel, and even the smell of reference books. Both authors of this work have felt those sensations repeatedly throughout the years. The senior author vividly recalls how he prepared himself for his first day's work at the Reference Desk of the New York Public Library.

> Just as a medieval squire maintained a nocturnal vigil burnishing his sword before being dubbed a knight on the following day, I stayed up reviewing my copy of the *Guide to Reference Books* before reporting to work the next day. That famous source, which I had held on to since my student days at Columbia, was edited by Mudge then. I can proudly claim the honor of having studied reference under the late, great Isadore Gilbert Mudge. I discovered early in my professional career that man's need for information is not always satisfied through reference books. From reinforcement of that awareness repeatedly through the years, I was motivated to originate the concept of the generic book, to be discussed later in this work.

In similar respects the associate author of this work [Krzys] also felt that excitement during his first day on the job in the Reference Department of the Cleveland Public Library.

> Through the mixture of odors of papers, bindings, glues, and dyes I knew that I was in the arena of ideas and experienced the smell of knowledge. One day as I was processing a new batch of reference books, a library user was surprised to see me in the act of closely smelling the pages of a particular reference book and asked, "What are you doing?" Rather matter of factly, I replied, "I'm smelling this reference book because it's from the Soviet Union." "Smell different from there, do they?" asked the reader in disbelief. "Of course," I replied, "because of particular materials the Russians use in making their books. This purple dye used for the binding material has an extremely strong odor."

Yes, reference bookmanship includes an awareness that transcends what might be considered the ordinary points of books, including in some rare cases even their smells. Purely from a rational viewpoint, however, reference bookmanship may be said to include knowledge of five items:

1. Definition of the concept
2. The reference process
3. Publishers of today's reference books
4. The generic book
5. Relating types of reference questions to their corresponding reference books

We have already defined the concept of reference bookmanship; the other aspects are separately discussed in the following sections.

THE REFERENCE PROCESS

Paralleling the development of modern librarianship, reference has matured since the last quarter of the 19th century, as evidenced by the changing definitions that

librarians have formulated to describe the process. Within this development may be observed the emergence of the librarian from the limited role of aiding patrons in the use of books within the library building to the catalytic role of today's librarian in the promotion of free inquiry through the use of the generic book. Even the former role represented a giant step forward from the thinking of many 19th-century librarians who viewed their functions as custodial or at best organizational.

By the 1930s, when North American librarians had firmly woven reference into the fabric of librarianship, James I. Wyer defined reference as:

> Sympathetic and informed personal aid in interpreting library collections for study and research.*

Since Wyer's time the reference process has been threatened with dehumanization through periodic onslaughts of methods, materials, and machines. During the 1930s the application of scientific method to library problems was considered by many librarians to offer a panacea through resource studies and reader surveys. Two decades later a host of audiovisual devices and materials seemed like unwelcome guests to some librarians. And during the 1950s the computer was thought by many librarians to be a Trojan horse that would permit the taking over of the library by documentalists, systems analysts, and information scientists. But each phenomenon has made its impact on librarianship through integration with the reference process. Evidence of this integration can be found in the writings of insightful library theorists—Jennie Flexner, Louis Shores, Jesse Shera, and Patrick Penland, to name a few—who viewed the variations of reference that they advocated as essentially humanistic processes.

On various occasions the senior author has defined reference as the promotion of free inquiry (*3*). To encourage that ideal the librarian must assume an initiatory role of motivating library users to search for truth through exploration of the total communication possibilities that relate to the individual's inquiry. Because of the dualistic nature of reference, requiring technical skill and humanistic tendencies, the reader will better understand the reference process by considering the question that began our discussion—"What is a reference book?"—in a hypothetical but plausible situation that might have prompted it.

THE CASE OF THE CONFUSED FRESHMAN

> After five successful years as a reference librarian within a university library, Mr. Frank Jasko was hired by Ms. Joan Lohrer, director of the college library, to head the reference department. Because the previous head had not been responsive to user needs, the reference staff, collection, and services needed revitalization. As

* Wyer's definition, as stated in his *Reference Work: A Textbook for Students of Library Work and Librarians* (American Library Association, Chicago, 1930, p. 4), described reference as "*informed* personal aid." Louis Shores's text *Basic Reference Books* (American Library Association, Chicago, 1939, p. 3) misquoted Wyer, calling reference "*informal* personal aid." Unfortunately, that error has been perpetuated by other writers who have quoted that text. The senior author must admit that informality does enter into the reference process in that reference is part of the library's mission of informal education.

Mr. Jasko was working in the reference area a few days after the start of the fall semester, he noticed a student scanning the shelves and went directly to him.

Noticing the student's name tag, Mr. Jasko asked, "Is there something I can help you find, Bill?"

"Not right now," replied Bill. "I just came over here this evening to browse through the library."

"Look around as much as you'd like," said Mr. Jasko. "And if I can help you find material for an assignment, term paper, or leisure reading, don't hesitate to ask."

"Well, I do need some help come to think of it. I have to make bibliographic citations and annotate ten books that I can use later this term in writing a paper about types of reference books, and I'm stumped," admitted Bill.

"What seems to be your main difficulty?" asked Mr. Jasko.

"This library overwhelms me. It's so much bigger than my public library back home that I don't know where to start. To be honest with you, I'm not quite sure what a reference book is, or a bibliographic citation either. And I'm not alone. Some of my buddies back at the dorm are in the same boat."

"Did your instructor suggest you start with any textbooks?" asked Mr. Jasko.

"Oh, yes. Before we left our composition class, Ms. Johnson dictated what sounded to me like—" and referring to his notebook Bill read, "*Guide to Libraries* by Gates."

"Okay," replied Mr. Jasko, "let's verify that." Referring to the card catalog, he located the card shown in Figure 1.

On a call slip Mr. Jasko wrote the following:

Z710 Gates, Jean Key. *Guide to the Use of Books*
G27 *and Libraries*. 3d ed. New York, McGraw-Hill,
1974 1974 308 p.

Z710
G27
1974

Gates, Jean Key.

Guide to the use of books and libraries. 3d ed. New York, McGraw-Hill [1974]

xii, 308 p. 21 cm.

Includes bibliographical references.

1. Reference books. 2. Libraries—Handbooks, manuals, etc. I. Title.

Z710.G27 1974 028.7 73-9502
ISBN 0-07-022984-8; 0-07-022983-X (pbk.) MARC

Library of Congress 73

FIGURE 1. *Main entry for* Guide to the Use of Books and Libraries, *by Jean Key Gates.*

Handing it to Bill, Mr. Jasko commented, "Here's a citation that you can list in your term paper. And you can locate the book in the stacks through its call number, listed on the left side."

"So that's a bibliographic citation!" commented Bill.

"When you've located that book, come back to me," said Mr. Jasko.

A few minutes later Bill came back and said, "I found that book and a couple of others along side of it that look useful."

"Fine," said Mr. Jasko. "And while you were searching I located a couple of items you may find useful—the definition of a reference book in the *A.L.A. Glossary of Library Terms* and an article on using libraries in the *World Book Encyclopedia*, both of which can be used in the library."

"That's about all I can soak up tonight," said Bill. Quickly examining the article, he remarked, "I wish I could take this with me because it looks like something I could refer to throughout the term."

"You can copy it quickly and cheaply on our duplicating machine," advised Mr. Jasko.

"Thanks, I will, and I'll be back again tomorrow morning because I can see I have plenty to do to finish this assignment," said Bill.

"I look forward to seeing you, and by noon tomorrow I'll have a list of ten reference books for you to examine and annotate," promised Mr. Jasko.

A few minutes after Bill left the library, Mr. Jasko telephoned Ms. Lohrer, who was still at work in the director's office.

"May I briefly discuss something with you, Ms. Lohrer?"

"Certainly, Frank. Come right in," replied Ms. Lohrer.

"As I helped a freshman tonight I discovered how uninformed he was about basic library skills. He also told me that some of his classmates are having the same problem. It sounds to me like we need a freshman orientation program in the use of the library."

"We really do," remarked Ms. Lohrer. "Would you think about it and discuss your thoughts on the matter with me within a week?"

"I'll be glad to," replied Mr. Jasko, "and I'll instruct my staff in participating in the orientation program. We have a lot to do because as I browsed through our stacks, I noticed how outdated our collection is in materials for instruction in the use of the library."

The next morning Bill returned to the library and continued his assignment, paying special attention to the reference books that Mr. Jasko cited for him. Bill also did some library searching on his own and then left the library building.

A few days later Bill returned when Mr. Jasko was at the reference desk.

"Hello, Bill," greeted Frank Jasko.

"Hi, Mr. Jasko. I really dug into that assignment, and I now realize that there's a lot to be learned about reference books. I became so interested in the topic that I now have a list of questions that I jotted down as they came to me while I continued my searching."

"Good, let's see what they are." Examining the list, Frank Jasko saw the following questions:

1. Where can I find a comprehensive list of reference books in all subject fields?
2. When did the word "dictionary" first appear in print in the English language?
3. Where can I find out something about encyclopedias?
4. What developments took place in book publishing within the past 5 years?
5. How do you do reference work?
6. What are the qualifications of the writer who wrote about the reference process?

7. Locate a few articles written by that individual?
8. How do you keep up with recent developments in reference?
9. How many books were published last year?
10. What are the names and addresses of some reference book publishers?
11. Where is Metuchen?
12. Does the United States government publish any reference books?
13. What types of sources other than books illustrate the use of reference books?

By analyzing the case just described, the reader will better understand the reference process and the four processes that comprise reference: (*a*) information, (*b*) documentation, (*c*) education, and (*d*) administration. Visually, the reference process might be pictured as an iceberg.

Information Function

An iceberg may seem a curious object to illustrate the reference process, but its appropriateness becomes evident when one realizes that only one part is constantly visible to the public. The information function, that is, providing answers to specific questions, is the most obvious duty of the reference librarian, but the three other functions—documentation, education, and administration—are necessary supporting functions. Through consideration of the vague inquiry that began our reference interview, the reader may gain a better understanding of the information function; however, the dualistic nature of the reference process, involving a combination of technical and humanistic considerations, requires mastery of the technique of library searching and a professional manner in assisting the library user.

Carter Alexander explained the technique of library searching in terms of six component steps that relate to the reference question: (*a*) verbalization, (*b*) analysis, (*c*) choice of pertinent material, (*d*) locating relevant material, (*e*) searching sources in order of likelihood, (*f*) retracing steps if the answer is not found (*4*).

The information function of reference may be considered a double-faced coin with technical aspects representing only one face. To give the reader a fuller appreciation of the information function we must look at its humanistic aspects as well. Here one must be aware of the qualities that reference librarians must possess, the characteristics of library users, and human factors that present themselves during the reference interview.

Various lists have been compiled of personal traits deemed desirable for reference librarians. Unfortunately, such lists are slightly reminiscent of characteristics normally attributed to the ideal Boy or Girl Scout; nevertheless, certain of these lofty characteristics should be expected of any reference librarian. They include the following: intelligence, accuracy, professional and subject knowledge, courtesy, tact, memory, mental curiosity, interest in people, perseverance, system, speed, and patience. In summarizing these qualities, James I. Wyer stated:

> If another summary statement is in order, it may be said that the ideal reference librarian must love Books, Folks, Order.
>
> His love for books should be contagious, making him quick to see and eager to embrace every opportunity to encourage and promote their use. It should be scholarly, not superficial; informed, not pretending.

His love of folks may be rendered accurately by the term "social-mindedness," a blend of cooperativeness, interest in people, and pleasantness. He will be agreeable physically and personally, a sane, broad, vital, and exceedingly curious person, keen to get to the heart of a student's problem.

His love of order agrees with and finds its justification in Pope's dictum, "Order is Heaven's first law," and its apotheosis in the library classification and catalog.

A final admonition suggested for keeping the librarian human is: have some outside interest or recreation which has nothing to do with library work. Love your work and prosecute it with vigor, but don't be ridden by it. You will be a better librarian because of the perspective so gained (*5*).

Concerning the characteristics of library users, the most accurate and succinct description was stated early in the 20th century by Corinne Bacon. She divided users into three categories, as follows:

(1) The select few who know just what they want, state their want with clearness, and expect you to meet it; (2) the people who expect nothing of you, apologize for disturbing you, and break out into a fever of gratitude over the slightest assistance . . . (3) the people who expect you to do all their work for them (*6*).

Commenting on the categories, James I. Wyer stated, "Isn't there a fourth group larger than any, or perhaps than all, of the others: the ordinary, earnest, reasonable inquirers who form the bulk of the reference clientele?" (*7*).

During the reference interview human factors present themselves. Some of them have been discussed by Frances Neel Cheney and described as "variables" that become evident [during the interview and search]:

1. How much the questioner already knows about the subject field in which his question falls.
2. How interested he is in the search.
3. How much information he wants.
4. How much assistance he wants.
   a. Would he rather "do it himself?"
   b. Would he rather "have it all done for him?"
5. How articulate he is in expressing his need for information.
6. How defensive he is in his attitude toward the librarian.
7. How soon he needs the information.

These same variables may be expressed from the standpoint of the librarian as:

1. How much the librarian knows about the subject field in which the question falls.
2. How interested he is in the search.
3. How much information he is prepared to provide.
4. How much direct assistance he is willing to give.
   a. Minimum
   b. Middling
   c. Maximum
5. How skillful he is in determining what the questioner wants.
6. How defensive he is in his attitude toward the questioner.
7. How quickly he can locate what is wanted.

These are only a few of the variables, expressed in very general terms and not in the language of a discipline such as psychology, sociology, or other behavioral science. But, to follow them with a few questions, we might ask:

1. If the questioner knows more about the subject field of his question than the librarian, is the librarian's attitude apt to be more defensive?

2. If the librarian knows more about the subject field than the questioner, is the questioner's attitude apt to be more defensive?
3. What happens if the questioner is more interested in the search than the librarian?
4. What happens if the librarian is not skillful enough or sympathetic enough to interpret the question and relate it to the proper source of information?
5. What happens if the library's resources are not adequate to meet the questioner's need?
6. What happens if the questioner wants the answer more quickly than the librarian can supply it? (8).

Documentation Function

Knowledge of bibliographic citation may be considered fundamental to reference bookmanship because the use of reference books requires the ability to interpret citations found in sources, and because imparting information to library users often requires the librarian to list a source or sources for later consultation by the patron. You would not be able to relate the information that we present about reference books if our bibliographic style did not adhere to three essential norms: (*a*) accuracy, (*b*) consistency, and (*c*) discrimination. Many of us have seen the sign "Our aim is accuraca." It may have caused you to smile, but incorrect authors, titles, places of publication, or pagination do not, if they occur within a citation. Second, our citation style must be consistent, if the reader is to be able to recognize the bibliographic data we include; and, finally, our listing of reference books must be selective if the reader is to grasp our subject matter in a reasonable length of time.

Following the form suggested in a style manual will aid the librarian in achieving the desired norms. As we prepared this manuscript for publication, we referred to a house manual supplied by the publisher. Two sources that should prove useful to the reader are:

Manheimer, Martha L., *Style Manual: A Guide for the Preparation of Reports and Dissertations,* Dekker, New York, 1973.

Turabian, Kate L., *A Manual for Writers of Term Papers, Theses, and Dissertations,* 3rd ed., Univ. of Chicago Press, Chicago, 1967.

Analyzing these citations, the reader will note that they contain three basic elements: (*a*) author's name; (*b*) title; and (*c*) imprint, consisting of publisher, place, and date. In cases where a work includes multiple volumes, or where mention of illustrations or size is desirable, this information may be included as a fourth item in the citation, referred to as the collation. Beyond the basic elements, secondary items—such as series title, price, a statement indicating the locations of copies of the item, and an annotation—may also be included as part of the citation.

Education Function

The education function includes guidance and instruction. Guidance may be best characterized as being advice, which may pertain to providing vocational information, direction in self-education, and application of bibliotherapy. Although librar-

ians should not pretend to be vocational counselors, librarians can provide "first-aid" career information through reference sources that will facilitate the work of the vocational counselor to whom the library user has been referred. In "The Case of the Confused Freshman," direction in self-education was provided by Mr. Jasko, the librarian, through the suggestions for reading that he made to the student. Similar direction is commonly given by reference librarians to patrons who wish to improve their knowledge of any subject. Bibliotherapy is that part of the education function that entails prescription of reading as a therapeutic measure for human illnesses that may be physical or mental.

Instruction, informal or formal, is another activity of the education function. Within school and academic libraries the reference librarian is frequently expected to teach formal courses in the use of the library or reference sources. Informally, the reference librarian should teach as often as the user needs and wishes instruction; such instruction may be as simple as teaching a college freshman how to make a bibliographic citation or to use a periodical index, or it may be more complex, for example, teaching a researcher to use a new data base or devising a file to meet his unique information requirements.

Administration Function and Evaluation of Reference Books

Least apparent to the observer is the administration function. Commenting on one of its aspects the senior author stated:

> The supervision function consists of maintaining an efficient service through (1) the proper organization of facilities, (2) selection of materials, (3) direction of personnel, and (4) study of clientele. This function involves all of the elements of good management. It includes also adequate co-ordination with other departments of the library and close association with the objectives of the community served (9).

Another aspect of the administration function is appraisal, that is, the evaluation of reference sources to determine their potential usefulness for a particular library community. Every reference librarian should know how to appraise reference sources.

Now let us consider the librarian's process of evaluation. If the reader remembers the acronym ASTAFS, he can recall the six points essential to the evaluation of reference books: (1) authority, (2) scope, (3) treatment, (4) arrangement, (5) format, and (6) special features. In order to acquaint the reader with reference books analytically, we recommend the evaluation form reproduced in Figure 2.

When evaluating reference books according to the form suggested, it is recommended that the following questions be considered:

I. Authority
   1. Authorship: What are the qualifications in experience and education of the author, authors, contributors, and editors by reputation and as revealed in previous works? To what extent are the authors responsible for the materials attributed to them?
   2. Auspices: What is the reputation of the publisher or the sponsoring agency?

REFERENCE SOURCES _____

CALL NO. _____ VOLS. or PP. _____ TITLE _____ (SUBJECT) _____ (TYPE) _____

AUTHOR _____ EDITOR(S) _____

PLACE _____ PUB. _____ DATE _____

I. AUTHORITY (AUTHORSHIP, AUSPICES, GENEALOGY) _____

II. SCOPE (PURPOSE, COVERAGE, RECENCY, BIBLIOGRAPHIES) _____

III. TREATMENT (ACCURACY, OBJECTIVITY, STYLE) _____

IV. ARRANGEMENT (SEQUENCE, INDEXING) _____

V. FORMAT (PHYSICAL MAKE-UP, ILLUSTRATIONS) _____

VI. SPECIAL FEATURES (DISTINCTION) _____

COMMENT OR ANNOTATION: _____

FIGURE 2. *Evaluation card for reference books, front and back.*

3. Genealogy: Is the work new? If it is based on a previous publication, what is the extent of the revision?

II. Scope

4. Purpose: To what extent is the statement of purpose in the preface fulfilled in the text?
5. Coverage: What is the range of subject matter and what are the limitations? How does this work relate to and compare with other works of similar scope?
6. Recency: How up to date is the material? Are all of the articles and bibliographies as recent as the last copyright date?
7. Bibliographies: To what extent do the bibliographies indicate scholarship and send the user on to additional information?

III. Treatment

8. Accuracy: How thorough, reliable, and complete are the facts?
9. Objectivity: Is there any bias in controversial issues? How balanced is the space given one subject as compared with others of equal importance?

10. Style: Is the level of writing for layman or scholar, adult or child? How readable is the work?

IV. Arrangement

11. Sequence: Does the sequence of content follow classified, chronologic, geographic, tabular, or alphabetic order? If alphabetic, are the topics large or small? How are they alphabeted?
12. Indexing: Is the main text arrangement adequately complemented by indexes and cross-references?

V. Format

13. Physical makeup: Do binding, paper, type, and layout meet minimum specifications?
14. Illustrations: Are the illustrations of good quality; are they of real significance; and are they directly related to the text?

VI. Special features

15. Distinction: What features distinguish this reference book from all others? (*10*).

PUBLISHERS OF TODAY'S REFERENCE BOOKS

Within the United States reference books are published by six kinds of publishers: (*a*) trade publishers, (*b*) textbook publishers, (*c*) university presses, (*d*) vanity presses, (*e*) government offices, and (*f*) subscription book publishers. (See the Appendix for a list of reference book publishers.) Trade publishers are the most familiar to the general public because they sell their reference books through bookstores. Included among some prominent trade publishers are: Gale Research Company, which publishes the *Book Review Index*; the Marquis Company, which issues *Who's Who in America*; and Macmillan, which publishes the *Encyclopaedia of the Social Sciences*. Textbook publishers depend mainly on adoption of their reference books by school systems. Principal among them is Scott, Foresman, which specializes in publishing dictionaries based on scientific-word counts devised by the educators E. L. Thorndike and Clarence L. Barnhart. Winston, another example of the textbook publisher (now merged with Holt, Rinehart), was responsible for issuing school dictionaries of merit. University presses originally began by publishing esoteric works of scholarly significance of limited commercial appeal; today many of them, with the Columbia University Press being a prime example, publish works that are as commercially successful as trade publications, for example, *Granger's Index to Poetry*. So sucessful has *The Columbia Encyclopedia* been that distribution of its present edition, *The New Columbia Encyclopedia*, is handled by J. B. Lippincott Company. No reference book published by a vanity press has become commonly known, but occasionally a vanity publisher issues a family history of local usefulness. Governments at the municipal, state, and federal levels publish useful reference books. The United States government—publisher of the *Statistical Abstract of the United States*, *Congressional Staff Directory*, and the *Congressional Record*, to name only three publications—is responsible for numerous reference books. In addition, many state and municipal governments publish "blue books" or legislative manuals. The quasi-governmental agency known as the United Nations issues various reference books, including the *United Nations' Demographic*

Yearbook and its *Statistical Yearbook*. Lastly, the subscription book publishers (those publishers that sell directly to the home through sales representatives) are responsible for many outstanding reference books, including Field Enterprises, which publishes *World Book Encyclopedia*; Grolier, which issues the *Encyclopedia Americana*; and Collier, which publishes *Collier's Encyclopedia*.

THE GENERIC BOOK

Regardless of the large number of reference publishers and the wide variety of their publications, not all questions can be answered through the use of the traditional codex form of the book issued by these sources. A question may relate to a concept so recent that relevant information may exist only in a conference report or in the mind of the researcher who conceived the concept. For such information, the reference librarian must be able to utilize the generic book. The senior author has defined its meaning as follows:

> The LIBRARY DISCIPLINE pursues its study through the GENERIC BOOK, the sum total of man's communication possibilities. Man has communicated over the centuries through various media formats on a variety of subjects and over a range of levels related to human maturities at different times and places.
>
> Book history reveals early clay tablet formats, followed by papyrus and parchment. The invention of the printing press in the fifteenth century launched the still predominant print format, despite the doomsday predictions of the Frenchman Maurice Duhamel and the Canadian Marshall McLuhan. Even the earliest writings were a kind of picture, and it is not surprising that the power of that format has periodically been rediscovered from the time of Confucius' oft quoted 10,000 word equal, through Comenius' seventeenth century *Orbis Sensualium Pictus*, to contemporary audiovisualism's "flat pictures." Graphics produced an avalanche of formats and sub-formats ranging from graphs and charts through murals and dioramas, posters, boards of various kinds—chalk, bulletin, flannel, magnetic, and peg-comics, cartoons, and all of the others featured in textbooks on audiovisual materials.
>
> Hardware inventions for sound and sight gave us phonodiscs and tape recordings, still and motion picture projections, and radio and television, introducing a new galaxy of formats for the generic book. Stereophonic recordings, magnetic tapes, radio transcriptions and videotapes, slides, filmstrips, transparency overlays, and microprojections all augmented the formats of man's communication possibilities. So did the computer, especially with its remote consoles, and telefacsimiles, teaching machines, microprojection, and other variations on the physical makeup of the generic book. Nor can so-called community resources—natural, social, human—targets of field trips and school journeys, of oral history and innovative video history, be discounted as part of the generic book.
>
> A format on the horizon of the generic book that has just begun to excite attention is the area which is called psychics, in some universities abroad and parapsychology, in some United States institutions, and popularly recognized as ESP (extrasensory perception). As investigations in telepathy, precognition, clairvoyance, psychometry, and psychokinesis tend to remove the word "alleged" inserted into the dictionary definitions of these terms, it becomes convincingly apparent that man has other yet uncultivated communication possibilities. The generic book of the near future will unquestionably include these extrasensory media.

Through the generic book, with all the present and potential possibilities of man for communication, the library discipline pursues its study of man and God, of the riddle of the universe.

By subject, the generic book has been classified, epistemologically, by several great library thinkers of the past and present. Despite the current rage to reclassify by Library of Congress, especially in academic libraries, the Dewey Decimal Classification represents a philosophical approach to all knowledge as significant as Mendeleev's periodic classification of chemical elements or Linnaeus' classification of plants and animals. The creative librarian from India, Ranganathan, introduced, with his Colon Classification, some stirring dimensions into the answer to the philosophical question, "what do we know?"

By level, librarianship, through its library discipline, has attempted to match individual differences of maturity in people with individual differences of communicability in the generic book. Certain library aids in the selection of print and other media formats, especially for children and young people, have undertaken to grade materials, either broadly by "easy" or "intermediate" or "advanced" or even by school grades (K through 12).

By format, there had been some unsystematic attempts to separate so-called "audiovisual" materials from "print," or even less accurately, so-called "non-book" from "book." The inadequacy of such misclassifications was sharply revealed when both audiovisual and library textbooks claimed the same formats, e.g., maps, globes, pictures, museum objects, bulletin board exhibits, phonodiscs, and many other physical makeups of the generic book. This vague separation of formats into AV and library was further complicated when publishers and producers insisted on crossing the boundary with transparency overlays in encyclopedias, phonodiscs in textbooks, and other cross-media packaging (*11*).

. . .

My format classification of the generic book is as follows (*12*):

The Generic Book

A format classification

Format class	Representative format divisions
I. Print	A. Textbook B. Reference book C. Reading book D. Serial
II. Graphic	A. Map–Globe B. Picture C. Exhibit D. Object
III. Projection	A. Slide B. Transparency C. Motion picture D. Micro
IV. Transmission	A. Disc B. Tape C. Radio D. Television

V. Resource	A. Natural B. Social C. Human
VI. Program	A. Teaching machine B. Computer assisted
VII. Extrasensory	A. Telepathy B. Precognition C. Clairvoyance D. Psychometry

RELATING TYPES OF REFERENCE QUESTIONS TO THEIR CORRESPONDING REFERENCE BOOKS

For the majority of questions asked in libraries, reference books are the logical starting place. If, for example, the reader asks, as our confused freshman Bill did—"Where can I find a comprehensive list of reference books in all subject fields?"—a bibliography is the proper source of information. Despite the protestations of the advocates of the case method approach to reference, much of the reference process involves a knowledge of reference bookmanship and matching the questions to their sources, as follows:

Reference Questions and Their Corresponding Types of Reference Books

Types of questions	Examples	Corresponding types of reference books
Book	Where can I find a comprehensive list of reference books in all subject fields?	Bibliography
Language	When did the word "dictionary" first appear in print in the English language?	Dictionary
Background	Where can I find out something about encyclopedias?	Encyclopedia
Trend	What developments took place in book publishing within the past 5 years?	Yearbook
Activity	How do you do reference work?	Manual
People	What are the qualifications of the writer who wrote about the reference process?	Biographical source
Citation	Locate a few articles written by that individual.	Index
Current awareness	How do you keep up with recent developments in reference?	Serial
Fact	How many books were published last year?	Handbook
Organization	What are the names and addresses of some reference book publishers?	Directory
Place	Where is Metuchen?	Geographical source

Government	Does the United States government publish any reference books?	Government document
Visual	What types of sources other than books illustrate the use of reference books?	Audiovisual source

The Literature of Reference

TYPES OF REFERENCE BOOKS

Thirteen types of reference books have been identified:

1. Bibliographies
2. Dictionaries
3. Encyclopedias
4. Yearbooks
5. Manuals
6. Biographical sources
7. Indexes
8. Serials
9. Handbooks
10. Directories
11. Geographical sources
12. Government documents
13. Audiovisual sources

So rich are they in content and style that reference books deserve being called the literature of reference. Each category is defined and discussed in the following sections of this article, and examples are given.

BIBLIOGRAPHIES

Definition

Bibliographies may be defined as lists of written, printed, or otherwise produced records of civilization. In an effective description, William Katz describes them as follows:

> A bibliography is analogous to a map or a chart. It serves to guide the librarian in the chaotic world of books and other forms of communication. Just as no sensible navigator would set out to sea without a chart, no modern library can hope to function without bibliographical guides.
>
> From the viewpoint of the user, who may not understand the fine shades of bibliography, it serves one basic need. He may know what he wants, but he is never sure it exists or, more important, where he can find it. The bibliography gives him the answers.
>
> A request for a book by title, author, or subject is a common question. Normally, the first logical place to find the answer is the card catalog. For most purposes this serves well enough. It fails when a part of the book is needed, when the book is

> not in the library, or when it is a type of material, such as an elusive government document, which may not be in the catalog. Then, too, the patron may have the incorrect title or author or may simply find it impossible to fathom the ambiguities of the cataloging system. At this point, he desperately needs the assistance of a librarian who in turn may go to other bibliographic tools to locate the needed material.
>
> These, then, are the practical functions of bibliography which may be defined simply as a well organized list or inventory. There are numerous definitions, and champions of this or that explanation can become quite heated in their insistence on the true meaning of the word. Still, regardless of form, it is usually enumerative; that is, some selection process is carried on to determine what or what not will be listed. Also, it is generally systematic in that the material is arranged in a consistent form (*13*).

As a source likely to answer the first question asked by Bill—"Where can I find a comprehensive list of reference books in all subject fields?"—the librarian might suggest the *Guide to Reference Books*, now compiled by Eugene P. Sheehy. Since 1902, when it was first compiled by Alice Bertha Kroeger, the *Guide to Reference Books* has been the reference librarian's reference book. When its present compiler began to prepare the ninth edition, he was advised by Constance Winchell, his predecessor, "Try not to let it get as big as the Manhattan telephone directory." Sheehy succeeded by a slight margin while still managing to maintain its reputation as the most comprehensive list of reference books. Containing approximately 10,000 titles, the ninth edition divides reference materials into five areas with subdivisions classified by subject and by form. Current topics, such as women, environmental engineering, and science fiction, have been adequately covered. Its inclusion of LC classification numbers enables librarians to locate reference books within their own collections.

Uses and Types

Throughout their daily work librarians frequently consult bibliographies. Their uses may be divided into two categories: selection and identification.

The need for selection tools is obvious when one becomes aware of the thousands of titles published annually. Which among these sources will answer the questions and reading interests of a library's community? Eclectic bibliographies, or lists of sources selected for a purpose, will cite the "best" sources, that is, those most appropriate for that purpose. Representative of eclectic bibliographies is the Standard Catalog Series published by the H. W. Wilson Company. Each section of the series emphasizes books of proven usefulness within the scope of the following five titles: *Children's Catalog, Junior High School Library Catalog, Senior High School Library Catalog, Fiction Catalog,* and *Public Library Catalog.*

Despite its title, the *Cumulative Book Index* is actually a bibliography. As a world list of books in the English language, *CBI* is an indispensable reference source, as evidenced by the wealth of data it contains, including author's or editor's name, full title of book, illustrator's name, translator's name, indication of illustrations or maps, binding (if other than cloth), price, ISBN if available, publication date, publisher, edition, series note, paging, size (if other than standard shelf

size), and Library of Congress card number. Examples of sample entries from *CBI* are shown in Figure 3.

The Dictionary Catalog of the Prints Division is an example of a library catalog published by G. K. Hall and Company. This publication samples the approximately 83,000 cards for the holdings of the literature in books and periodicals on prints and print making in the New York Public Library. A sample page of this publication, which is typical of the format of the G. K. Hall library catalogs, is shown in Figure 4.

Sample Entries

Zichichi, Antonino
(ed) See International School of Subnuclear Physics, 1973. Laws of hadronic matter

Ziegler, Daniel J. See Hjelle, L. A. jt. auth.

Zim, Herbert Spencer, 1909-, and Krantz, Lucretia
Sea stars and their kin; il. by René Martin. 64p $4.95; lib bdg $4.95 '76 Morrow
ISBN 0-688-22053-3;0-688-32053-8
LC 75-17023

Zinberg, Norman Earl, 1921-, and others
Teaching social change; a group approach. 252p '76 Johns Hopkins Univ. Press
ISBN 0-8018-1771-4 LC 75-26746

Zinngrabe, Claude J. and Schumacher, F. W.
Sheet metal machine processes. Q 136p il '75 Delmar (Albany)
ISBN 0-8273-0222-3 LC 73-2160

Zionism
Stevens, R. P. Weizmann and Smuts. See main entry

Zirkel, Gene, and Rosenfeld, Robert
Beginning statistics. 318p pa $9.95 '76 McGraw
ISBN 0-07-072840-2 LC 75-6940

Zissos, Demetrius
Problems and solutions in logic design; with contributions by F. G. Duncan. 146p '75 Oxford (London)
ISBN 0-19-859347-3;0-19-859348-1
Available in USA from Am. office of Oxford. $5.25; pa $4.95

Cross-references are made from variant name forms to the proper name form—CBI is used as a reference tool for establishing correct name forms

Cecil, Robert Arthur Talbot Gascoyne-, 3d Marquis of Salisbury. See Salisbury, R. A. T. G.-C.

Gascoyne-Cecil, Robert Arthur Talbot 3d Marquis of Salisbury. See Salisbury, R. A. T. G.-C.

Salisbury, Robert Arthur Talbot Gascoyne-Cecil, 3d Marquis of, 1830-1903.
Rose, K. The later Cecils. £6.50 '75 Weidenfeld

This title main entry, with a cross-reference from the editor, illustrates many of the elements that make up complete descriptive cataloguing. The entry shows that the title is volume 20 of a series, of which this particular volume was edited by F. E. Hahn; it also shows the ISBN, the publisher and two other distributors, the date of publication and the price in four currencies

Acquired resistance of microorganisms to chemotherapeutic drugs; v. ed: F. E. Hahn (Antibiotics and chemotherapy, v20) 272p Fr 139 (DM 132) '76 Karger
ISBN 0-8055-2198-7

Teachers seeking the latest information on the teaching of their discipline will find citations of new books under the name of the subject. Other subheadings under English language include Examinations, questions, etc.; Grammar; Study and teaching; Textbooks for foreigners

English language
Jones, R. A new English course. £2 '75 Heinemann Educ.
Rowe, A. English for living. v 1-3 pa ea £1.35 '75 Macmillan (London)

Composition and exercises

Finlayson, D. S. and Smith, T. D. Clear English. rev ed stages 1-2 pa ea £0.75 '75 Nelson, T.
Guth, H. P. ed. Our changing language. $7.80 '75 McGraw
Guth, H. P. ed. The uses of languages. 2d ed $7.80 '75 McGraw

Readers' advisors will find books about animals, areas, specific periods of history, biographies, etc. listed under appropriate subject headings

Antarctic regions

Juvenile literature

Harrington, R. Richard Harrington's Antarctic. pa $8.95 '76 Alaska Northwest Pub.

Title changes are shown when that information is available so that a library may check its holdings under the previous title

Anderson, Evelyn McCullough
New windows for women. 186p pa $2.95 '76 Baker Bk. House
ISBN 0-8010-0101-3
Formerly pub. under title: It's a woman's privilege

Sometimes material is published in a book which has already been published in another form. This title main entry is an example

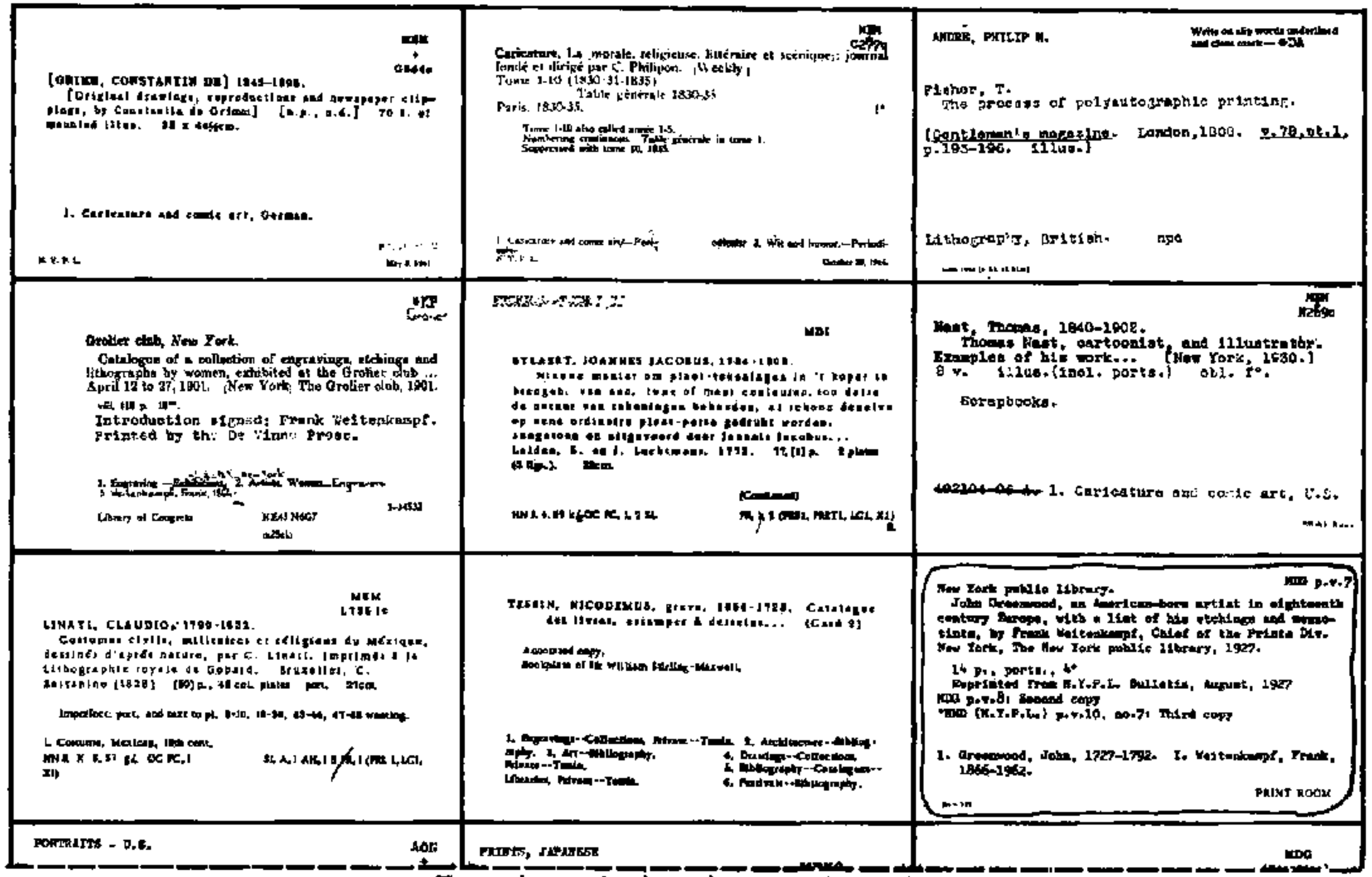
American electoral behavior; change and stability; ed. by Samuel A. Kirkpatrick. 143p pa $3.95 '76 Sage Publications
ISBN 0-8039-0582-3 LC 75-32374
Material orig. appeared as a special issue of Am. Politics quarterly, v3; no3, Jl. 1975

Directory of Publishers and Distributors

Hoover Inst. on War, Revolution & Peace, Stanford Univ, Stanford, Calif. 94305; refer orders to Hoover Inst. Press
Hoover Inst. Press, Stanford Univ. Stanford, Calif. 94305
Hope Farm Press & Bookshop, Strong Rd, Cornwallville, N.Y. 12418
Horizon Press, 156 5th Ave, New York, N.Y. 10010
Agent
Can: Smithers
Elsewhere: Feffer & Simons
Horwitz Group Bks. Pty. Ltd, 506 Miller St, Cammeray 2062, Aust.
Also use names Horwitz Publications; Martin Educ.
Horwitz Publications. See Horwitz
Houghton Mifflin Co, 1 Beacon st, Boston, Mass. 02107; refer orders to Wayside Rd, Burlington, Mass. 01803
Also use imprints Riverside Eds; Sandpiper Bks; Sentry Bks.
Branch office
U.K: 3 Henrietta St, London WC2E 8LU, Eng.
Agents
Can: Allen, T; Nelson
Elsewhere: Feffer & Simons

FIGURE 3. *Sample entries from the* Cumulative Book Index, *reproduced by permission of the H. W. Wilson Company, publisher.*

Catalog of the Prints Division


[GRIMM, CONSTANTIN DE] 1845–1898.
[Original drawings, reproductions and newspaper clippings, by Constantin de Grimm] [n.p., n.d.] 70 l. of mounted illus. 38 x 46cm.
1. Caricature and comic art, German.

Caricature, La morale, religieuse, littéraire et scénique; journal fondé et dirigé par C. Philipon. [Weekly]
Tome 1-10 (1830-31-1835)
Table générale 1830-35
Paris. 1830-35.
Tome 1-10 also called année 1-5.
Numbering continuous. Table générale in tome 1.
Suppressed with tome 10, 1835.
1. Caricature and comic art—France. 2. Wit and humor.—Periodicals.

ANDRE, PHILIP H.
Write on slip words underlined and class mark — *3A
Fisher, T.
The process of polyautographic printing.
(Gentleman's magazine. London, 1808. v.78, pt.1, p.193–196. illus.)
Lithography, British.

Grolier club, New York.
Catalogue of a collection of engravings, etchings and lithographs by women, exhibited at the Grolier club ... April 12 to 27, 1901. (New York; The Grolier club, 1901.
Introduction signed: Frank Weitenkampf.
Printed by the De Vinne Press.
1. Engraving—Exhibitions. 2. Artists, Women—Engravers.
Library of Congress

STLAERT, JOANNES JACOBUS, 1734-1808.
Nieuwe manier om plaat-tekeningen in 't koper te brengen, van een, twee of meer couleuren, ... de natuur van tekeningen behouden, al schoon dezelve op eene ordinaire plaat-persse gedrukt worden. ... Leiden, ... Luchtmans. 1772.
(Continued)

Nast, Thomas, 1840-1902.
Thomas Nast, cartoonist, and illustrator. Examples of his work... [New York, 1930.]
8 v. illus.(incl. ports.) obl. f°.
Scrapbooks.
1. Caricature and comic art, U.S.

LINATI, CLAUDIO, 1790-1832.
Costumes civils, militaires et religieux du Mexique, dessinés d'après nature, par C. Linati. Imprimés à la lithographie royale de Gobard. Bruxelles, C. Sattanino [1828]
1. Costume, Mexican, 19th cent.

TESSIN, NICODEMUS, greve, 1654-1728. Catalogue des livres, estampes & desseins... (Card 2)
Annotated copy.
Bookplate of Sir William Stirling-Maxwell.
1. Engravings—Collections, Private—Tessin. 2. Architecture—Bibliography. 3. Art—Bibliography. 4. Drawings—Collections. 5. Bibliography—Catalogs—. 6. Portraits—Bibliography.

New York public library.
John Greenwood, an American-born artist in eighteenth century Europe, with a list of his etchings and mezzotints, by Frank Weitenkampf, Chief of the Prints Div. New York, The New York public library, 1927.
14 p., ports., 4°
Reprinted from N.Y.P.L. Bulletin, August, 1927
MDG p.v.8: Second copy
*HND (N.Y.P.L.) p.v.10, no.7: Third copy
1. Greenwood, John, 1727-1792. I. Weitenkampf, Frank, 1866-1962.
PRINT ROOM

PORTRAITS – U.S.

PRINTS, JAPANESE

These cards were selected at random to show format only.

(a)

FIGURE 4. ***(a) Specimen page from the*** **Catalog of the Prints Division** ***(New York Public Library), published by G. K. Hall and Company. Figure 4(b) shows one of the cards reproduced on this page of the catalog. Reprinted by permission of the publisher.***

MDG p.v.7

New York public library.
John Greenwood, an American-born artist in eighteenth century Europe, with a list of his etchings and mezzotints, by Frank Weitenkampf, Chief of the Prints Div. New York, The New York public library, 1927.

14 p., ports., 4°
Reprinted from N.Y.P.L. Bulletin, August, 1927
MDG p.v.8: Second copy
*HND (N.Y.P.L.) p.v.10, no.7: Third copy

1. Greenwood, John, 1727-1792. I. Weitenkampf, Frank, 1866-1962.

PRINT ROOM

form 302

(b)

FIGURE 4, *continued.*

EXAMPLES OF BIBLIOGRAPHIES

American Book Prices Current, 1895– [publisher varies].

Besterman, Theodore, *A World Bibliography of Bibliographies*, 4th ed., Societas Bibliographica, Lausanne, 1965–1966, 5 vols.

Bibliographic Index: A Cumulative Bibliography of Bibliographies, 1937–, Wilson, New York, 1938–.

The Booklist, ALA, Chicago, Vol. 1–, 1905–, semimonthly.

Book Review Digest, Wilson, New York, 1905–.

Books in Print, Bowker, New York, 1948–.

British Museum, Department of Printed Books, *General Catalogue of Printed Books*, Trustees of the British Museum, London, 1959–1966, 263 vols.

British National Bibliography, Council of the British National Bibliography, British Museum, London, 1950–.

Children's Catalog, 13th ed., Wilson, New York, 1976.

Choice: Books for College Libraries, Association of College and Research Libraries, Chicago, Vol. 1–, 1964–, monthly.

Cumulative Book Index, Wilson, New York, 1898–.

Doctoral Dissertations Accepted by American Universities, 1933/34–1954/55, compiled for the Association of Research Libraries, Wilson, New York, 1934–1956.

Encyclopedia Buying Guide 1975–1976: A Consumer Guide to General Encyclopedias in Print, Bowker, New York, 1976.

Fiction Catalog, 9th ed., Wilson, New York, 1976.

Forthcoming Books, Bowker, New York, 1966–, bimonthly.

Great Books of the Western World and the Great Ideas, Encyclopaedia Britannica Educ. Corp., Chicago, 1952, 54 vols.

Guide to Reference Books, 9th ed., edited by Eugene P. Sheehy, ALA, Chicago, 1976.

The Harvard Classics, edited by Charles W. Eliot, Collier, New York, 1909, 50 [i.e., 52] vols.

Jackson, Ellen, *Subject Guide to Major U.S. Government Publications*, ALA, Chicago, 1968.

Junior High School Library Catalog, 3rd ed., Wilson, New York, 1975.

Leidy, William Philip, *A Popular Guide to Government Publications*, 4th ed., Columbia Univ. Press, New York, 1976.

Library of Congress Catalog, Books: Subject, 1950–1954: A Cumulative List of Works Represented by Library of Congress Printed Cards, Edwards, Ann Arbor, Mich., 1955, 20 vols.

Monroe, Walter Scott, and Louis Shores, *Bibliographies and Summaries in Education to July, 1935*, Wilson, New York, 1936.

National Union Catalog: A Cumulative Author List, Library of Congress, Card Division, Washington, D.C., 1956–.

National Union Catalog, 1956–1967: A Cumulative Author List Representing Library of Congress Printed Cards and Titles Represented by Other American Libraries, Rowman and Littlefield, Totowa, N.J., 1970–1972, 125 vols.

New Serial Titles: A Union List of Serials Commencing Publication after December 31, 1949, Library of Congress, Washington, D.C., January 1953–.

Paperbound Books in Print, Bowker, New York, 1955–, biannual.

Public Library Catalog, 6th ed., Wilson, New York, 1973.

Publishers' Trade List Annual, Bowker, New York, 1873–.

Publishers Weekly, Bowker, New York, Vol. 1–, 1872–, weekly.

Reader's Adviser, ed. 1–, Bowker, New York, 1921–, 2 vols.

Sabin, Joseph, *Bibliotheca Americana: A Dictionary of Books Relating to America, from Its Discovery to the Present Time*, Sabin, 1869–1892; Bibliographical Society of America, New York, 1928–1936, 29 vols.

Senior High School Library Catalog, 10th ed., Wilson, New York, 1972.

Subject Guide to Books in Print: An Index to the Publishers' Trade List Annual, Bowker, New York, 1957–, annual.

Subject Guide to Children's Books in Print, Bowker, New York, 1970–, annual.

Union List of Serials in Libraries of the U.S. and Canada, 3rd ed., Wilson, New York, 1965, 5 vols.

United States Catalog: Books in Print, 4th ed., Wilson, New York, 1928.

U.S. Library of Congress, A Catalog of Books Represented by Library of Congress Printed Cards, Issued to July 31, 1942, Edwards, Ann Arbor, Mich., 1942–1946, 167 vols.

U.S. Office of Education, Library, Bibliography of Research Studies in Education, 1926/27–1939/40, Government Printing Office, Washington, D.C., Vols. 1–14, 1929–1942, annual.

Wynkoop, Sally, *Subject Guide to Government Reference Books*, Libraries Unlimited, Littleton, Colo., 1970–, biennial.

DICTIONARIES

Definition

"What does the word dictionary mean?" is a characteristic dictionary question; however, it merely hints at the information potential in dictionaries. A dictionary is a book containing the words of a language, or the terms of a subject, arranged in some definite order, usually alphabetic, with explanation of their meanings and use (*13*).

Uses and Types

At least ten uses have been identified for dictionaries:

1. Definition: Meanings of words, phrases, and expressions such as protocol, frame of reference, pork barrel, nuclear fission.
2. Spelling: Does Cincinnati have one n before and two t's after the a? How are such catchy words as believe, camouflage, and mnemonic spelled?
3. Pronunciation: What do the authorities say about such words as either, tomato, creek?
4. Usage: What is the proper use of such words as lay and lie? What is a split infinitive?
5. Synonyms, antonyms, and homonyms: How many alternative expressions can be found for "This book is interesting?" The writer who wants to vary the expression of an idea by using many equivalent words can find help in general dictionaries and supplementary synonym books.
6. Abbreviations, signs, and symbols: In a single day the reference librarian may be asked to identify CWT, #, *, and j.n.d.; and may be asked to supply the symbols representing English pounds, coefficient of correlation, and 3.14159. These may be found in dictionaries and in special abbreviation books.
7. Slang: What is the slang meaning of violin case, squeeze play, pulling a fast one, taking a powder?
8. New words, and new meanings for old words: Lunar module and yaw are examples of new words. Détente has given a new meaning to an old French word.
9. Dialect: Identification of various regionalisms and national idioms is made easier by the use of special dialect dictionaries.
10. Foreign terms used in English writing: Sine qua non, voilà, and gestalt require translation by readers (*14*).

Four types of dictionaries may be identified: unabridged, abridged, supplementary English-language sources, and foreign-language dictionaries.

"When did the word 'dictionary' first appear in print in the English language?" is a question that requires the use of an outstanding unabridged dictionary, *The Oxford English Dictionary*. While commenting on the *OED*, Mary Neill Barton provided us with some interesting statistics: "Seventy-five years of active preparation and 50 years' work by a permanent staff and over 800 volunteer readers went into the gathering of more than 2,000,000 quotations, which make this one of the greatest dictionaries ever undertaken" (*15*).

Outstanding examples are to be found among the three remaining types of dictionaries. Undoubtedly the best known of the abridged type is *Webster's New Collegiate Dictionary*. In its eighth edition this source includes approximately 152,000 entries and appendices devoted to foreign words and phrases, biographical names, geographical names, colleges and universities, signs and symbols, and a handbook of style. Among the seven types of supplementary English-language sources—usage, synonyms, abbreviations, slang and dialect, pronunciation, rhyme, foreign terms and comparative language—none is more noteworthy than the *Thesaurus* of Peter Roget (1779–1869). This London physician was convinced of the need for a dictionary arranged in an order other than alphabetic. After devoting 50 years of labor to the project, Roget's *Thesaurus* emerged as words arranged by categories according to the idea or significance of the word. An alphabetical index directs the user to the category. The associate author of this article, through his language study, has spent the larger part of his life using foreign-language dictionaries. One bilingual dictionary that he finds exceptionally accurate and dependable is the *Appleton's New Cuyás English–Spanish and Spanish–English Dictionary*. Constant revision has been a characteristic of the various editions of *Cuyás* since its first appearance in 1928.

EXAMPLES OF DICTIONARIES

Acronyms, Initialisms, and Abbreviations Dictionary, 5th ed., Gale, Detroit, 1976.

The American Heritage Dictionary, Houghton-Mifflin, Boston, 1973.

American Library Association, Committee on Library Terminology, *A.L.A. Glossary of Library Terms, with a Selection of Terms in Related Fields*, American Library Association, Chicago, 1943.

Berrey, L. V., and M. Van Den Bark, *American Thesaurus of Slang*, 2nd ed., Crowell, New York, 1953.

Cassell's New French Dictionary, Funk and Wagnalls, New York, 1970.

Cassell's New German Dictionary, Funk and Wagnalls, New York, 1971.

Cassell's New Latin Dictionary, Funk and Wagnalls, New York, 1966.

DeSola, Ralph, *Abbreviations Dictionary*, American Elsevier, New York, 1974.

Funk and Wagnalls New Standard Dictionary of the English Language, Funk and Wagnalls, New York, 1964.

Good, Carter V., *Dictionary of Education*, 3rd ed., McGraw-Hill, New York, 1973.

Jacobs, Arthur, *A New Dictionary of Music*, Penguin, Baltimore, Md., 1970.

Mathews, Mitford McLeod, *A Dictionary of Americanisms on Historical Principles*, Univ. of Chicago Press, Chicago, 1956, 2 vols.

Mawson, Christopher, *Dictionary of Foreign Terms*, Crowell, New York, 1934.

McGraw-Hill Dictionary of Art, McGraw-Hill, New York, 1963, 5 vols.

Murray, Sir James Augustus Henry, *Oxford English Dictionary*, Clarendon Press, Oxford, 1933, 12 vols. and suppl.

NBC Handbook of Pronunciation, 3rd ed., Crowell, New York, 1964.

New Acronyms, Initialisms and Abbreviations, Gale, Detroit, 1976.

Nicholson, Margaret, *A Dictionary of American English Usage Based on Fowler's Modern English Usage*, Oxford Univ. Press, New York, 1957.

Partridge, Eric, *A Dictionary of Slang and Unconventional English: Colloquialisms and Catchphrases, Solecisms and Catachreses, Nicknames, Vulgarisms, and Such Americanisms as Have Been Naturalized*, 7th ed., Macmillan, New York, 1970, 2 vols. in 1.

Rainbow Dictionary for Young Readers, Collins-World, Cleveland, 1972.

Random House Dictionary of the English Language, College Edition, Random House, New York, 1968.

Roberts, Hermese, *The Third Ear: A Black Glossary*, English Language Institute of America, Chicago, 1971.

Roget, Peter M., *The Original Roget's Thesaurus of English Words and Phrases*, St. Martin's, New York, 1965.

Shankle, G. E., *Current Abbreviations*, Wilson, New York, 1945.

The Shorter Oxford English Dictionary on Historical Principles, 3rd ed., Clarendon Press, Oxford, 1973.

Thorndike–Barnhart Beginning Dictionary, Doubleday, New York, 1972.

Thorndike–Barnhart High School Dictionary, 5th ed., Scott, Foresman, Chicago, 1968.

Warren, Howard, *Dictionary of Psychology*, Houghton, Boston, 1934.

Webster's Elementary Dictionary, Merriam, Springfield, Mass., 1971.

Webster's New Collegiate Dictionary, Merriam, Springfield, Mass., 1973.

Webster's New Dictionary of Synonyms, Merriam, Springfield, Mass., 1973.

Webster's New World Dictionary of the American Language, Collins-World, Cleveland, 1976.

Webster's Third New International Dictionary, 3rd ed., Merriam, Springfield, Mass., 1971.

Wentworth, H., *American Dialect Dictionary*, Crowell, New York, 1944.

The World Book Dictionary, Field Enterprises, Chicago, 1974, 2 vols.

ENCYCLOPEDIAS

Because encyclopedias are functional composites of all types of reference sources—they list works as do bibliographies, define words as do dictionaries, describe places as do geographical sources, etc.—they merit extended treatment here.

Definition

An encyclopedia, as defined by the senior author, is a systematic summary of the knowledge that is most significant to mankind. Its function may be clarified by contrasting the encyclopedia with a dictionary. In brief, a dictionary *defines;* whereas an encyclopedia *defines and interprets.* In some respects, you might say that an encyclopedia begins where a dictionary leaves off. A dictionary tells "what"; an encyclopedia tells "what," "when," "how," "where," and "why."

Historical Development of Encyclopedias

Our knowledge of the origin of reference books (from visual to encyclopedia), as discussed in the beginning of this article, is, of course, speculative; but we

have definite information about encyclopedias and their historical development. Encyclopedias are major reference sources, containing so much information that good encyclopedias were once referred to as "the backbone of much of the reference work in any library" (*16*). To answer the question "Where can I find out something about encyclopedias?" we can look in an encyclopedia. Checking its index, we locate an article about encyclopedias in the "E" volume. Here we would find the high-points of the topic presented in narrative form and accompanied by relevant illustrations.

As the article would indicate, the etymology of the word encyclopedia is Greek and means a cycle of instruction, or as we would say today, a well-rounded education. As the etymology also suggests, the historical development of encyclopedias dates from ancient Greece.

The father of encyclopedias was the ancient Greek philosopher Aristotle. He did not intend to write an encyclopedia, but Aristotle wrote so prolifically that his treatises, once assembled, constituted the first known encyclopedia. It was intended to include the lecture notes which Aristotle wrote for the instruction of his students in the Academy of Athens. His *Metaphysics* and *Nicomachean Ethics* may be considered encyclopedic articles on philosophy, and the *Poetics* is a treatise containing Aristotle's aesthetic theory concerning the evaluation of tragedy. Following the example of the Greeks, scholars of subsequent historical periods produced encyclopedias embodying the knowledge of their times.

The Roman period produced various encyclopedias, the most famous of which was compiled by Pliny the Elder, who lived around 77 A.D. Pliny enlarged Aristotle's concept of encyclopedia design. Unlike Aristotle's work (whose ideas represented mainly the philosopher's own thought), Pliny's *Historia Naturalis* represented a compilation of knowledge drawn from the writings of 473 authors of many countries. Another significant difference was that the Roman encyclopedia was intended by Pliny to be read independently of university lectures, for purposes of self-instruction. Unfortunately, the Roman encyclopedist was extremely gullible, and his *Historia Naturalis* contained many fallacies, which influenced learning for at least 1,500 years.

During the medieval period scholarly monks produced encyclopedias. They copied encyclopedias from antiquity and also compiled original sources. These original works differed from their prototypes of classical antiquity in that medieval encyclopedias combined Christian thought and pagan learning. Just as the Romans had epitomized knowledge of the ancient world for their people, the sixth-century Roman Cassiodorus Senatorus interpreted Latin knowledge for the Goths, the new rulers of Rome.

Cassiodorus wrote his encyclopedia as a retirement project. After an active life as a Roman statesman, Cassiodorus retired to the Vivarium Monastery in 551 A.D., where he wrote the *Institutiones Divinarum et Humanarum Lectionum,* an encyclopedic work in two books which totaled 36 chapters. Similar to Aristotle's writings, Cassiodorus's encyclopedia was also intended for an academy, the monastery. Like the Academy of Athens, medieval monasteries were devoted to instruction, but rather than scholarly agencies they were popular ones designed for the instruction of simple and unpolished brothers. In some respects, Cassiodorus might have had a

precognition in that, sensing the uncertain times ahead for scholarship, he saw the necessity for preserving knowledge accumulated to his time. And he did so in his encyclopedia, the *Institutiones.*

Medieval scholars continued to compile encyclopedias; for example, during the seventh century, the medieval scholar Isidore of Seville compiled an encyclopedia called the *Etymologiae.* In this work Isidore wanted to explain all knowledge of his time, such as the conception of the known world. He was so successful in achieving the purpose that for centuries his encyclopedia was the principal reference source, and almost every monastic library had a copy. Even today, Isidore's encyclopedia exists in approximately 1,000 manuscripts.

In another part of the world, in China, an encyclopedia called the *Huang ian* was produced. This first Chinese encyclopedia was prepared for the emperor about 200 A.D. Unfortunately, no part of this third-century Chinese encyclopedia is extant. Other Chinese encyclopedias which have come down to us in whole or in part date from the sixth and seventh centuries.

Judging from existing evidence, the oriental concept of encyclopedia design was quite different from that of the West. Rather than the synthetic approach of the Greeks or the practical approach of the Romans, the oriental mind viewed knowledge as a composite of all existing facts. Illustrative of this approach was the work of Yung Lo La Tien, developed in the 15th century. It comprised 11,100 volumes.

The Arabic world produced its first recorded encyclopedia in the ninth century. Called the *Kitab'uyun al-Akhbar,* this source was the work of Ibn Qutaiba, an Arabic philologist. He wanted to make the knowledge of his times available to ordinary educated men, and Ibn Qutaiba did so in an encyclopedia of 10 books. Their subjects were as follows: Power, War, Nobility, Character, Learning and Eloquence, Asceticism, Friendship, Prayers, Food, and Women.

The Renaissance, which symbolized the rebirth of ancient learning, had a parallel development in its encyclopedias. In the 14th century the dominican friar Hugnes Ripelin wrote his *Compendium Philosophiae,* a comprehensive eight-book encyclopedia of Renaissance thought. It incorporated Greek thought derived from Arabic texts.

During the 17th century the concept of encyclopedia design was radically changed by the writings of Francis Bacon. His *Advancement of Learning* introduced the concept of the interrelationship of knowledge. Following Bacon's ideas, many European encyclopedists transformed their products from compendia of miscellaneous information to works which correlated all areas of knowledge.

Although every age had its encyclopedia, one of the great periods of encyclopedia development was the 18th century. Benefiting from the classification of knowledge which Bacon had devised, two encyclopedists of the 18th century compiled revolutionary works. In 1728 the Englishman Ephraim Chambers published his two-volume encyclopedia, mainly a dictionary when judged from today's standards. Not only was his English work a significant reference source on its merits, but it was also important for the influence it exerted on the French *Encyclopédie.*

Denis Diderot, a French scholar of the 18th century, edited the *Encyclopédie,* intending his efforts to be mainly a translation of Chambers's *Cyclopaedia*; however,

when he finished, Diderot had produced a far greater work than the English source which had inspired it. The *Encyclopédie* and supplements totaled 35 volumes. By the 18th century knowledge had increased so greatly that Diderot was unable to compile the encyclopedia himself, and he needed the help of various experts and writers.

The names of the key contributors to Diderot's *Encyclopédie* read like a who's who of French intellectuals, including Voltaire, Rousseau, d'Alembert, and Montesqieu, among others. Approximately 160 scholars contributed articles to Diderot's *Encyclopédie.*

This work exerted a twofold impact on its times. The innovations which the French encyclopedia introduced made it a model for future European encyclopedias, and its analytical viewpoints searchingly scrutinized the beliefs held during the 18th century. Some concepts of social change introduced by the encyclopedia culminated in the French Revolution. One innovation introduced by Diderot's *Encyclopédie* was its use of engravings. In addition to the 21 volumes of text, 11 supplementary volumes contained approximately 3,000 engravings, an example of which shows the art of fencing (Figure 5).

The English-speaking world had its great 18th-century reference source in the *Encyclopaedia Britannica.* Although it was inspired by Diderot's work, there existed a strong desire to improve the inadequacies of the French encyclopedia among the Scotsmen who planned the *EB*. Their efforts resulted in a three-volume first edition of the *Encyclopaedia Britannica*, published between 1768 and 1771 in Edinburgh.

Its title page showed that the work was subtitled "dictionary of arts and sciences." It also indicated that the *Encyclopaedia Britannica* was "compiled upon a new plan in which the different sciences and arts were digested into distinct treatises or systems." A characteristic of the *EB* since its beginning has been its long-article

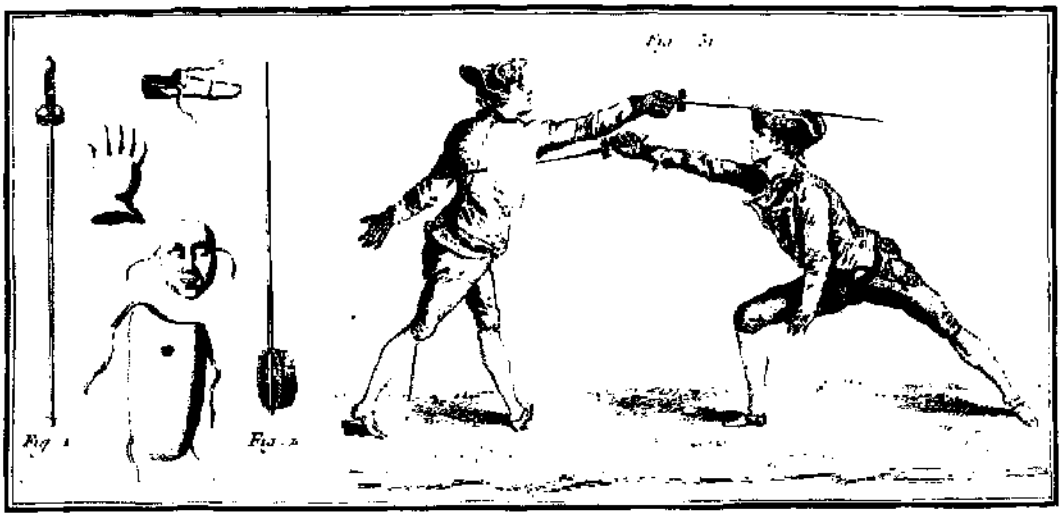


FIGURE 5. *Sample engraving from Diderot's* Encyclopédie, *published between 1751 and 1772.*

policy. William Smellie, editor of the first edition of the *EB*, believed in thorough treatment of topics, but he was highly critical of empty rhetoric.

One hundred and sixty copper plate engravings, the work of Andrew Bell, were included in the first edition of the *Encyclopaedia Britannica*. In contrast to the French *Encyclopédie*, which isolated its illustrations in separate volumes, the *Encyclopaedia Britannica* placed its illustrations in the same volumes as the relevant text.

The first edition of the *Encyclopaedia Britannica* was only a moderate success when judged by its sales and scholarship. It remained for subsequent editions to win the praise which the educated world was eventually to heap on the *Britannica*. Of all its editions, the ninth, published between 1875 and 1889 under the editorship of William Robertson Smith, is still considered to be an outstanding *Encyclopaedia Britannica* from the standpoint of scholarship.

Another famous encyclopedia with a long history is the *Encyclopedia Americana*. In keeping with the practice of many encyclopedias, the first edition of the *Americana*, published in 1833, was patterned after an earlier work, the *Brockhaus*, a German encyclopedia.

German encyclopedias published during the 19th century maintained a high degree of scholarship, but during the 20th century the German tradition for accuracy and encyclopedia publishing was to be broken. Shortly before the Second World War, the Nazis under Adolph Hitler censored all book publishing. Scholarly German encyclopedias such as the *Brockhaus* suffered greatly from distortions of fact and political bias demanded by the Nazis.

A similar phenomenon was to occur in fascist Italy under Mussolini. Il Duce replaced the editor of the *Enciclopedia italiana di scienze, lettere ed arti* with the fascist Giovanni Gentile, and this encyclopedia, too, suffered from bias similar to the German encyclopedia. Also, in the Soviet Union, comparable censorship existed with the *Bol'shaia sovetskaia entsiklopediia*.

Often encyclopedias have been subject to criticisms, especially by librarians. When, shortly after the Second World War, a major publishing company decided to design a completely new encyclopedia, the publisher decided to seek the help of encyclopedias' most outspoken critics: librarians. In planning their new encyclopedia, the F. P. Collier Company went to the American Library Association for aid.

As a result of ALA's advice, Collier appointed a librarian and writer on reference, as library consultant. Under the guidance of Dr. Louis Shores, *Collier's Encyclopedia* won immediate acceptance among its users when it was published in 1949, and since then it has maintained a high reputation for accuracy and readability.

As a summary of the history of encyclopedia publishing, the British scholar Robert Collison stated the following:

> . . . The first fourteen hundred years of encyclopedia making had seen the development of almost all the features we recognize in the modern version: the reliance on polished authority . . . the attempt to give overall coverage, and the intense preoccupation with classification: the introduction of the encyclopedia dictionary and use of alphabetic arrangement for this purpose; and, finally, the use of collaboration—a feature which rarely occurred again for the next seven hundred years. While the Arabs seem to have made a close study of classical and Byzantine thought

> and philosophy, there is practically no sign that the Western encyclopedia-makers knew much of the resources of Arab thought and invention—a situation which prevails even today in the exchange of culture between East and West. And the development of the Chinese encyclopedia was remote and most uninfluenced by either Arab or Christian. And so it has continued to the present day: the three great streams of encyclopedias have developed independently and almost in complete ignorance of each other's methods and policies (*17*).

Milestones of encyclopedia development include Aristotle's encyclopedia, Pliny's *Historia Naturalis,* Diderot's *Encyclopédie,* and today's encyclopedias. They may be summarized in four phases: the single author era, the single compiler–multiple source era, the single editor–multiple author era, and the multiple editor–interdisciplinary author team era. This change in editorial responsibility may be explained by the exponential growth in knowledge, which made it impossible for any single editor, regardless of his or her scholarly attainment, to cope with the expansion of knowledge that has taken place since encyclopedias first appeared.

Types of Encyclopedias and Uses

Many people are impressed by the size of encyclopedias and erroneously conclude that encyclopedias must be large works having many volumes. Actually, the essence of an encyclopedia is in its encirclement of knowledge, not in its size. Encyclopedias are of various types, each with its audience.

The adult comprehensive encyclopedias may be remembered as the ABC's: *Americana, Britannica,* and *Collier's.* In them, all areas of knowledge are represented according to their relative importance in the stream of history; consequently, Napoleon is usually given as much space as the outstanding presidents of the United States.

The *Encyclopedia Americana* is an impressive adult reference work when judged statistically or from illustrations of its special features. The *Americana* numbers 30 volumes, 54,800 articles, 31.5 million words, 27,380 pages, 22,100 illustrations and maps, and 353,000 index entries; and it includes various study aids, for example, direct alphabetical references, cross-references within articles, illustrations, glossaries of technical terms, and bibliographies.

The *Encyclopaedia Britannica* has been a highly respected English-language encyclopedia since 1768. Its 11th edition, published between 1910 and 1911, was called by Robert Collison "probably the finest edition of the *Britannica* ever issued." Collison added that the 11th edition of the *EB* "ranks with the *Italiana* and *Espasa* as one of the three greatest encyclopaedias in the world" (*18*). In 1974 the publisher of the *Encyclopaedia Britannica* departed from the traditional format—and perhaps made publishing history—by issuing *Britannica 3,* the 15th edition of the *EB.* Individuals who may be called "the makers of *Britannica 3*" are Dr. Robert M. Hutchins, Mr. Warren E. Preece, Dr. Mortimer J. Adler, and the late Mr. William Benton.

Britannica 3 is as remarkable in its statistics and special features as one would expect from the venerable publishing history that had preceded it. Most obviously,

Britannica 3 is three encyclopedias in one, boasting 43 million words in 30 volumes. It required an editorial staff of over 300, an advisory staff of more than 200, and more than 4,000 contributors. Time-wise the work required a decade and a half and 2½ million man-hours of editorial work—all at a cost of more than $32 million. Notwithstanding these impressive facts, *Britannica 3* is still a controversial reference work, as indicated by the *Guide to Reference Books:*

> Time and use will determine the effectiveness of the new arrangement, but many will find the lack of a bonafide, detailed index a serious drawback. For some time to come, most libraries will want to keep the latest printing of the 14th ed. on the reference shelves (*19*).

The *Britannica 3* is arranged in three parts: Propaedia, Micropaedia, and Macropaedia, which the publishers have described as follows:

> The Propaedia is that rarity, something new under the sun. It is the kind of venture that apparently has not been undertaken since well before the Industrial Revolution and the dawn of modern knowledge. It is the end result of a sustained effort by a group of eminent authorities to put into one vast and comprehensive outline the major elements of man's knowledge.
>
> In a sense, the Propaedia was published almost by accident, for it was originated as an editor's tool, an elaborate weapon against overlooking obscure but important elements of knowledge and against duplicating in one article matter already covered somewhere else.
>
> The editors saw knowledge as being contained in that "circle of learning" that is expressed by *encyclopaedia* in Greek. After extended reflection and argument, they concluded that it could be divided into ten parts, with a couple of strays that would not fit neatly into any part. The ten are matter and energy, the Earth, life on Earth, human life, human society, art, technology, religion, the history of mankind, and the branches of knowledge. The odd ones are geography, which relates to earth, society, history, and the branches of knowledge; and biography, which relates to history, as well as to the part of the circle of learning affected by the subject of the biography.
>
> When this mammoth outline had been constructed—occupying nearly two cubic feet in a dozen bulky loose-leaf notebooks on the desk of each major editorial executive—the proposal was made, then accepted, to adopt it for publication.
>
> Almost whimsically, the editors had been calling the outline their "table of intents." Now it was decided to convert it into a table of *contents,* for the outline did indeed include in orderly, topical form every subject in the new *Britannica.* Its 15,000 subdivisions were referenced to the 45,000 places in the Macropaedia where they were covered, and the job was done, save for one last and major step needed to turn the work into an instrument of self-education. Introductory essays were written by highly literate scholars to set out the boundaries and concerns of each part, and explanatory headnotes were written to introduce each major subdivision.
>
> When all this was completed, the new *Britannica* had an educational implement like no other encyclopaedia had ever had, a device for systematic study of a whole field of knowledge or of any of its segments or of their interrelationships with other parts of segments. In addition, it was a fertile field for browsing by any intelligent and curious layman. And finally, it was something encyclopaedists have contemplated off and on for generations but rarely have tried to assemble: a topical mode of access to an alphabetically general encyclopaedia.

[The Micropaedia is] a Ready Reference and Index. . . . This short-entry encyclopaedia is also the index to the main text of the new *EB*.

Half of its 102,000 entries are shorter than 50 words—and therefore the remaining 50,000-odd range from 50 or so words upward to 750, the upper limit for the Micro and its ten volumes.

Most of those entries, long or short, refer the reader to where in the main text volumes he can turn to find fuller explanation on the subject. A few of the Micro capsules are complete in themselves, presenting the only information on their subjects that is contained in the whole encyclopaedia.

Every one of the 4,207 articles in the main text volumes is either described or reflected in synopsis form in the Micro, and each of these articles is followed by an exhaustive list of the subjects covered in the major article, with volume and page numbers for each subject, plus a location on the text page where the information sought is found. Locations a through d refer to the left-hand column (top to bottom), while e through h refer to the right-hand column.

The Micropaedia volumes made copious use of illustrations—about a quarter of them in color. There are more than 15,000 illustrations in the volumes, an average of 1.5 per page. Most of the set's biographies are in this section. One of the Micro's outstanding features is its information boxes on the nations of the world. Each includes a map and descriptive material about population, politics, and economics. Much of this data, detailing industrial, agricultural, educational, and other material, gives information, particularly on the newer nations, that cannot be obtained even from the United Nations.

Another important attribute of the Micropaedia is its writing. It was written in direct and lucid language, expressly so that a junior high school student will be able to use it for school homework on subjects taught in junior high school.

Macropaedia—This is where to find the traditional authority and comprehensiveness for which *Encyclopaedia Britannica* has long since been the synonym. But this section of the new edition is traditional with a difference.

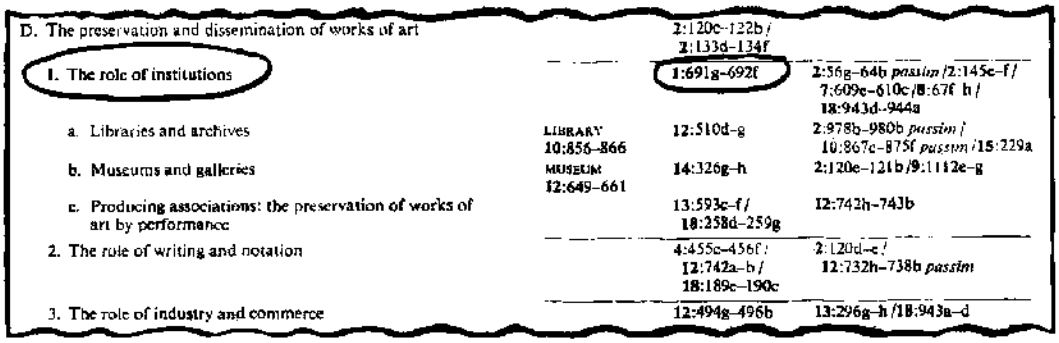
First of all, in the planning and organizing of the new set—from the ground up—many short articles that used to appear at various alphabetical points in the 14th Edition have now been incorporated into comprehensive articles in the 15th. Because of that kind of condensation and coherence, and also, importantly, because articles of 750 words or less appear only in the Micropaedia, there are fewer articles in the new Macropaedia. They number only 4,207, but they average more than five pages each, instead of less than a page in the old set.

The shortest articles in the Macro are about 1,000 words long. The longest is nearly a quarter million words, and it is one of at least a dozen and half each of which is as long as one or two or three ordinary books.

The 19 volumes of the Macro contain almost 22,000 pages, with 8,000 illustrations plus 160 color plate inserts. In this edition, thanks to a breakthrough in printing and paper, four-color as well as black-and-white illustrations (except for the insert plates) appear in the text at precisely the point that needs to be illustrated.

Newly international in scope and outlook, the Macropaedia articles are the work of 4,277 scholars and other authorities from 131 countries (*20*).

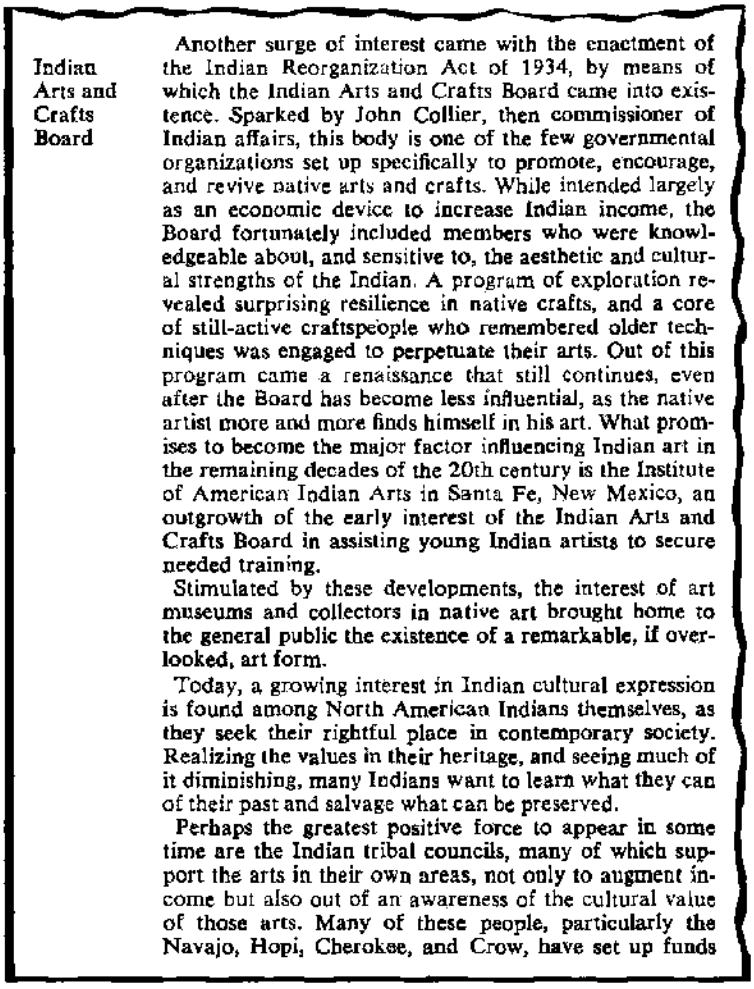
The functions of the three sections of *The New Encyclopaedia Britannica* and the relationships among the Propaedia, Macropaedia, and Micropaedia may be shown by tracing one subject through all three sections. (See Figures 6–8.) If a reader were interested in art, he might wish to gain an overview of the topic by asking the very general question: What can I learn about art? The Propaedia, or Outline of Knowledge, will assist the reader in answering that question while guid-



D. The preservation and dissemination of works of art		2:120c–122b / 2:133d–134f	
1. The role of institutions		1:691g–692f	2:56g–64b *passim* / 2:145c–f / 7:609e–610c / 8:67f–h / 18:943d–944a
a. Libraries and archives	LIBRARY 10:856–866	12:510d–g	2:978b–980b *passim* / 10:867c–875f *passim* / 15:229a
b. Museums and galleries	MUSEUM 12:649–661	14:326g–h	2:120e–121b / 9:1112e–g
c. Producing associations: the preservation of works of art by performance		13:593c–f / 18:258d–259g	12:742h–743b
2. The role of writing and notation		4:455c–456f / 12:742a–b / 18:189c–190c	2:120d–e / 12:732h–738b *passim*
3. The role of industry and commerce		12:494g–496b	13:296g–h / 18:943a–d

FIGURE 6. *Specimen entries from the "Propaedia" of* The New Encyclopaedia Britannica, *published in 1974.*

ing him to relevant articles in the Macropaedia. Specific topics, such as the role of institutions in the preservation and dissemination of works of art, are located within the Macropaedia through subdivisions of the outline within the Propaedia. For all references within the text of *The New Encyclopaedia Britannica* to narrow



Indian Arts and Crafts Board

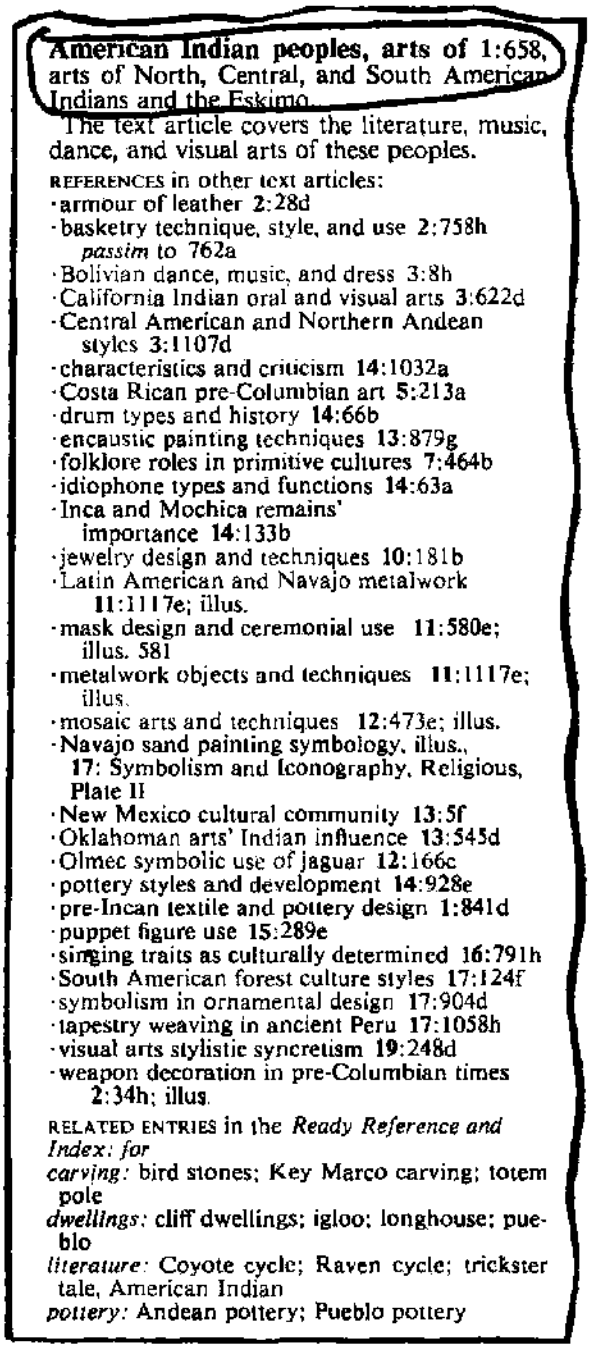
Another surge of interest came with the enactment of the Indian Reorganization Act of 1934, by means of which the Indian Arts and Crafts Board came into existence. Sparked by John Collier, then commissioner of Indian affairs, this body is one of the few governmental organizations set up specifically to promote, encourage, and revive native arts and crafts. While intended largely as an economic device to increase Indian income, the Board fortunately included members who were knowledgeable about, and sensitive to, the aesthetic and cultural strengths of the Indian. A program of exploration revealed surprising resilience in native crafts, and a core of still-active craftspeople who remembered older techniques was engaged to perpetuate their arts. Out of this program came a renaissance that still continues, even after the Board has become less influential, as the native artist more and more finds himself in his art. What promises to become the major factor influencing Indian art in the remaining decades of the 20th century is the Institute of American Indian Arts in Santa Fe, New Mexico, an outgrowth of the early interest of the Indian Arts and Crafts Board in assisting young Indian artists to secure needed training.

Stimulated by these developments, the interest of art museums and collectors in native art brought home to the general public the existence of a remarkable, if overlooked, art form.

Today, a growing interest in Indian cultural expression is found among North American Indians themselves, as they seek their rightful place in contemporary society. Realizing the values in their heritage, and seeing much of it diminishing, many Indians want to learn what they can of their past and salvage what can be preserved.

Perhaps the greatest positive force to appear in some time are the Indian tribal councils, many of which support the arts in their own areas, not only to augment income but also out of an awareness of the cultural value of those arts. Many of these people, particularly the Navajo, Hopi, Cherokee, and Crow, have set up funds

FIGURE 7. *Specimen entry from the "Macropaedia" of* The New Encyclopaedia Britannica.



American Indian peoples, arts of 1:658, arts of North, Central, and South American Indians and the Eskimo.

The text article covers the literature, music, dance, and visual arts of these peoples.

REFERENCES in other text articles:
- armour of leather 2:28d
- basketry technique, style, and use 2:758h *passim* to 762a
- Bolivian dance, music, and dress 3:8h
- California Indian oral and visual arts 3:622d
- Central American and Northern Andean styles 3:1107d
- characteristics and criticism 14:1032a
- Costa Rican pre-Columbian art 5:213a
- drum types and history 14:66b
- encaustic painting techniques 13:879g
- folklore roles in primitive cultures 7:464b
- idiophone types and functions 14:63a
- Inca and Mochica remains' importance 14:133b
- jewelry design and techniques 10:181b
- Latin American and Navajo metalwork 11:1117e; illus.
- mask design and ceremonial use 11:580e; illus. 581
- metalwork objects and techniques 11:1117e; illus.
- mosaic arts and techniques 12:473e; illus.
- Navajo sand painting symbology, illus., 17: Symbolism and Iconography, Religious, Plate II
- New Mexico cultural community 13:5f
- Oklahoman arts' Indian influence 13:545d
- Olmec symbolic use of jaguar 12:166c
- pottery styles and development 14:928e
- pre-Incan textile and pottery design 1:841d
- puppet figure use 15:289e
- singing traits as culturally determined 16:791h
- South American forest culture styles 17:124f
- symbolism in ornamental design 17:904d
- tapestry weaving in ancient Peru 17:1058h
- visual arts stylistic syncretism 19:248d
- weapon decoration in pre-Columbian times 2:34h; illus.

RELATED ENTRIES in the *Ready Reference and Index: for*
carving: bird stones; Key Marco carving; totem pole
dwellings: cliff dwellings; igloo; longhouse; pueblo
literature: Coyote cycle; Raven cycle; trickster tale, American Indian
pottery: Andean pottery; Pueblo pottery

FIGURE 8. *Specimen entries from the "Micropaedia" of* The New Encyclopaedia Britannica.

topics such as the arts of American Indian peoples, the reader is directed to the Micropaedia. The term circled in Figure 8 (from the Micropaedia) identifies cross-references relevant to the topic.

Because the senior author has worked in an editorial capacity for *Collier's Encyclopedia* since 1946, first designing *CE* and then serving as editor-in-chief, we shall attempt to keep our description of *Collier's Encyclopedia* as factual and bias-free as possible. *The Guide to Reference Books* annotates it as follows:

> A usable, readable encyclopedia for the student and layman. Aimed at the high school and junior college level; it is more advanced than the juvenile encyclopedias in its treatment and choice of subjects, but its coverage is not so great and information is not usually so detailed as in the Britannica or the Americana. There has been somewhat greater emphasis on scholarly quality in the past decade. The style is popular, clear, and concise. Many articles are long and well developed, others are short under very specific headings. In recent printings a high percentage of articles is signed with full names of contributors. Alphabeting is letter by letter. Pronunciation is indicated by the international phonetic alphabet. Illustrations, both in color and black-and-white, are pertinent and well reproduced; maps are prepared by Rand McNally.
>
> Bibliographies are not given at the ends of articles but are grouped together in the last volume, where they serve as reading lists in the various subject fields. Arranged under broad subjects with subdivisions. Insofar as possible, within each subdivision, general and elementary subjects are treated first, followed by more advanced and specialized works. Titles starting at high school level and progressing through college level and beyond, were selected with a view to their availability, and therefore most are of a recent date; all are in the English language.
>
> The consolidated index indexes text, illustrations, maps, and bibliography (*21*).

Creating *CE* provided Shores the opportunity to put his theory of encyclopedia design, that he calls encyclopedics, into practice. His attempts to make *CE* as accurate as humanly possible created situations that were sometimes painful and sometimes enjoyable, as can be illustrated by the following:

> Errors creep in easily, with so many contributors, subjects, and editors. Humans are only human. I have awakened nights, almost screaming over my errors. I give you my word that I did not deliberately set out to falsify. Error just crept in, in spite of all of us.
>
> This happened to me right after the first edition of *Collier's* appeared. The company president tossed a letter on my desk, with a twinkle in his eye that said, "Let me see you get out of this." Said the correspondent, a new owner of the set: "You say in your encyclopedia that it's 98 miles from Pittsburgh to Altoona. That's a goddam lie. I'm a salesman that drives it regularly and my speedometer shows 102.5 miles. If you are that inaccurate, how can I trust the rest of the set? Give me my money back."
>
> I did what any good reference librarian would do. I rechecked five geographical reference sources, including *Columbia-Lippincott Gazetteer* and *Webster's Geographical Dictionary*. God was on my side. I came up with five different mileages given for the distance between the two cities. I sent these five figures to my correspondent, apologized to him, and asked him what he would do if he were in my place.
>
> Back came the most astounding letter I have ever received. "Collier's is wonderful," he wrote. "I averaged those five distances, and it came out 98, the exact mileage your Encyclopedia gives. I'll keep my set" (*22*).

Besides the obvious use of foreign-language encyclopedias as reference sources for English-speaking individuals who have a reading knowledge of a particular foreign language, foreign encyclopedias are also useful for locating articles for readers whose mother tongue is not English. Subjects treated sketchily or not at all in English-language encyclopedias are often given comprehensive coverage in foreign encyclopedias. The Spanish encyclopedia, *Enciclopedia universal ilustrada*

europeo-americana, called *Espasa* for its publisher, is excellent for its coverage of Hispanic topics. The *Enciclopedia italiana* . . . is detailed and authoritative in architecture and opera, but it is sometimes biased in areas where nationalism may be a factor.

Who invented the telephone? The answer you find may depend on the encyclopedia you choose as your information source. Most encyclopedias attribute the invention to Alexander Graham Bell, but the *Enciclopedia italiana de scienze, lettere ed arti* names Antonio Meucci as the *inventore del telefono.* Consulting an adult comprehensive encyclopedia will clear up the confusion by supplying details which connect Bell's invention with its forerunner by Meucci.

The Soviet Union has since 1926 had its national encyclopedia: the *Bol'shaia sovetskaia entsiklopediia.* Its three editions have appeared as multivolume comprehensive works, originally 65 volumes in its first edition and now approximately 30 volumes in its third edition, still in progress. Although international in scope, when judged according to the checkpoints used for evaluating encyclopedias—authority, scope, arrangement, treatment, format, and special features—the *Bol'shaia* is considered a biased source, favoring information that emphasizes communist achievements throughout the world; however, in university-level Soviet studies programs, such information is valuable for understanding the Soviet point of view.

Until recently the wealth of information contained in the *Bol'shaia* was available only to those with a reading knowledge of Russian. In 1973 the Macmillan Educational Corporation began a translation of the third edition of *Bol'shaia,* opening its contents to English-language users. Macmillan is translating the volumes as they appear, with 1979 as the projected completion date for its translation, which is called *The Great Soviet Encyclopedia.*

The bias or point of view is apparent on almost every subject consulted. Readers acquainted only with noncommunist information will receive some surprises as they read articles from *The Great Soviet Encyclopedia,* for example, those on "Great Patriotic War of 1941–45" and "automotive monopolies." The following excerpts are reprinted from promotional material distributed by Macmillan, Inc.

from the article
GREAT PATRIOTIC WAR OF 1941–45 (Vol. 4)
The Soviet Union bore the major brunt of the war on its shoulders. . . . The fascist German invaders destroyed hundreds of cities and more than 70,000 villages, leaving about 25 million people homeless. . . . The Soviet Union lost more than 20 million people dead (with civilians), which amounted to 40 percent of all the human losses in World War II. . . . In destroying the fascist aggressors, the Soviet Union not only defended its freedom and independence but played the decisive role in the liberation of the peoples of Europe and Asia from the threat of fascist enslavement. World civilization was saved. Therein lies the world-historic contribution of the Soviet people to mankind.

from the article
AUTOMOTIVE MONOPOLIES (Vol. 1)
The overwhelming proportion of the production and sale of automobiles is in the hands of a few monopolies in the USA, West Germany, France, Italy, and Britain.

> In 1966 almost four-fifths of all the automobiles in the capitalist world were produced by three American and seven West European automotive monopolies, some 60 percent of them by US monopolies. Since the late 1950's, Japanese companies have moved into the ranks of the leading automotive monopolies.

Subject encyclopedias concentrate on one area of knowledge. They give in-depth coverage to subjects treated less comprehensively in general encyclopedias. The *Encyclopedia of Library and Information Science,* which you are consulting now, gives greater depth of coverage to the topic of reference books, for example, than is presented in general encyclopedias. Other examples of subject encyclopedias are the *Encyclopaedia of the Social Sciences,* the *Encyclopedia of Education, The McGraw-Hill Encyclopedia of Science and Technology,* and the *Encyclopaedia Judaica.*

The publication of the *Encyclopaedia Judaica* by Keter Publishing House, Ltd., represents an achievement marked by scholarship and determination. In 1928 the Berlin-based Verlag Eshkol began to issue an encyclopedia that was intended to cover all aspects of Judaism and Jewish life. The writing was scholarly and thorough; however, the Nazi rise to power brought the German-language source to a halt in 1934 with the completion of Volume 10, ending with the entry Lyra. Volumes 1 and 2 were also issued in Hebrew. The survivors of the editorial board were determined that the encyclopedia should survive. When it was begun anew in Israel, the encyclopedia was based on new research and was published in English. The result, appearing under the imprint of Macmillan in the United States, is a comprehensive, up-to-date source about international Jewry in approximately 25,000 articles—the 16-volume *Encyclopaedia Judaica.*

Abridged encyclopedias form another category, two examples of which are *The New Columbia Encyclopedia* and the *Lincoln Library of Essential Information.* Articles in *The New Columbia Encyclopedia* treat in a condensed style the essential facts about topics covered in comprehensive encyclopedias, as in the following excerpt reprinted from promotional material distributed by J. B. Lippincott Company:

> **arrowhead,** any plant of the genus *Sagittaria,* widely distributed marsh or aquatic herbs of the primitive family Alismataceae (water-plantain family). The name derives from the arrowhead-shaped leaves of many species. The North American Indians prepared a potatolike food by roasting or broiling the tubers, particularly of *S. latifolia;* another species has long been cultivated in the Orient for its starchy root. Arrowheads, which have white, buttercuplike flowers, are often grown in aquariums, ponds, and bog gardens. Arrowheads are classified in the division MAGNOLIOPHYTA, class Liliatae, order Alismatales, family Alismataceae.

In contrast to adult encyclopedias, school encyclopedias, such as *The New Book of Knowledge, Compton's Pictured Encyclopedia, World Book Encyclopedia,* and the *Encyclopedia International,* differ in at least the following ways:

1. More limited range of subject matter
2. Briefer treatment of subject matter
3. The use of a simple vocabulary
4. Recognition of juvenile interests
5. Freer use of illustrations

Among the excellent school encyclopedias already cited, the *World Book Encyclopedia* merits mention as the best-selling encyclopedia in the world. Since 1918, when the source was first published, it has been well accepted as a useful school encyclopedia. Its reputation was greatly enhanced in 1947 when Field Enterprises Educational Corporation, headquartered in Chicago's Merchandise Mart, issued its 19-volume, rebuilt *World Book Encyclopedia.*

Uses of Encyclopedias

An important use of encyclopedias is for background information. For the student who asks the librarian, "Where can I find something about Africa?" an encyclopedia offers the logical starting place. Good reference practice does not end there. It goes to the card catalog, vertical file, and indexes to locate information, but the question should begin at the encyclopedia's own index, which pinpoints other material besides the article on Africa, such as examples of African art.

Maps are also included in encyclopedias. These may be of various types—political, historical, relief, and topographical maps. Statistical summaries are often provided in encyclopedias.

Pictures are also included in encyclopedias. Although color can be important, black and white is sometimes more effective, as in illustrations of architecture. Color, when properly used, can make items and situations alive. The articles and illustrations in encyclopedias are usually supplemented by bibliographical listings.

Evaluation of Encyclopedias

Every librarian should know how to evaluate encyclopedias, according to the criteria established by Louis Shores. The six main check points for encyclopedia evaluations are as follows:

1. **Authority**
2. **Scope**
3. Arrangement
4. Treatment
5. Format
6. Special features

In evaluating authority, the librarian should consider the encyclopedia's publisher, editors, contributors, and genealogy. The main question to be answered here is: Are the encyclopedia's publisher, editors, and contributors qualified to carry out the work's purpose? Genealogy refers to a set's publishing lineage. Is the encyclopedia a new work, or is it based on an earlier work? If so, what was the reputation of the earlier work? Reviews of earlier editions or of a completely new encyclopedia may often be found in the *Booklist.*

Under scope we must contrast the purpose of the encyclopedia, as revealed in its preface, with the work's content. Are they the same? Or is there a discrepancy between what the editor intended and what was actually published? Within an en-

cyclopedia's scope we must also consider the work's plan, its range, selection, and balance. Do the articles cover topics evenly, so that the same type of data included in the article on Asia, for example, is included in the article on Africa? Under range we must look at the work's completeness of coverage. Does the encyclopedia cover all areas of knowledge, or are certain areas given lesser coverage or none at all? For what class of reader is the encyclopedia intended? Is the work's emphasis on fact finding, as in *The New Columbia Encyclopedia,* or on reading for self-education, as in the *Lincoln Library*?

Are the subjects popular, do they represent the scholar's "circle of knowledge," or are they school interests? Balance of topics is also to be considered within scope. Here we must contrast the inclusion of modern topics with ancient topics, scientific subjects with humanistic topics, and British versus United States topics. In all cases the all-important questions are: are the topics balanced? and what is the relation of this encyclopedia to work in various subject fields?

Under arrangement of an encyclopedia we must examine its parts, such as its organization, index, study guide, cross-reference, alphabeting, and devices. The organization may use large topics such as the *New Encyclopaedia Britannica's* Macropaedia, or shorter topics such as those contained in the *World Book Encyclopedia.* Other arrangements include classified, such as that used in the *Lincoln Library.* Does the encyclopedia contain a study guide? Are cross-references included? Is alphabeting consistent? And are devices such as whole letter volumes and running heads used to aid readers?

Under treatment we must check style, objectivity, and accuracy. Are the articles written for the layman or the scholar? Here the librarian can check an unfamiliar topic for the set's readability. Objectivity may be tested through controversial topics, such as politics and religion. And accuracy may be judged through the encyclopedia's statistics, facts, names, and places. Are they correct? Everyone can be an "expert" in some area of knowledge. Check your hometown article, for example. Do its statistics, facts, names, and places correspond to your knowledge of your hometown?

Format of an encyclopedia includes binding, paper, type, page makeup, illustrations, and maps. In each case they should be attractive and adequate to cover the topic. Is the binding durable? Is the paper of good quality? Is the type of adequate size to be read easily? Are pages attractive in terms of margin? Illustrations and maps should be of a nature to correspond to text, and they should be, ideally, keyed to the text.

Finally, librarians examine an encyclopedia's special features, such as bibliographies, revision policy, reader services, and any others included. Do the bibliographies contain significant titles which are accessible to the reader? Is the encyclopedia revised continuously, as most United States encyclopedias are; or is it periodically revised, as many foreign encyclopedias are? Is the set supplemented by a yearbook? No encyclopedia can possibly answer all questions asked by readers—but, does the encyclopedia provide for answering questions not covered in the text? Does the encyclopedia contain teaching aids, such as an accompanying

guide for instructional purposes? These are all important questions to answer when evaluating an encyclopedia.

Design and Production of Encyclopedias

The needs of the users must be taken into consideration in designing and selecting a new encyclopedia. User needs vary so greatly that it is absolutely essential in effective design for encyclopedia publishers to make a thorough study of an encyclopedia's audience before they plan an encyclopedia. The process of encyclopedia design involves the following stages: definition of scope, definition of audience, writing of articles, editing of articles, typesetting, making page layouts, adding necessary supplementary material, and printing. In the first stage, editors and consultants work together to plan the encyclopedia and to define its scope and audience.

Experts from many fields of knowledge are then selected by the editor or editors to write the articles. After it is written, each article is carefully edited and its facts are checked by a researcher. A copy editor corrects grammar and spelling. The manuscript is set in type. Page layouts show how text and illustrations will fit together. Necessary supplementary material is included. Photographs are selected from all over the world. Original art work adds color, imagination, and accurate detail. All illustrations must be approved by editors and experts. The entire set is indexed. Huge color presses print the final pages, and the books are ready to be read and enjoyed.

Are today's encyclopedias as good as their illustrious predecessors?—those of Aristotle, Pliny, or Diderot? We believe they are better, because of the constant efforts of librarians and, lately, the trend to incorporate the efforts of information scientists in the encyclopedia design.

EXAMPLES OF ENCYCLOPEDIAS

American Educator Encyclopedia, Tangley Oaks Educational Center, Lake Bluff, Ill.

Bol'shaia sovetskaia entsiklopediia, 3rd ed., Sovetskaia Entsiklopediia, Moscow, 1970–1975, 19 vols. (in progress).

Britannica Junior Encyclopaedia, Encyclopaedia Britannica, Chicago, 15 vols.

Brockhaus Enzyklopädie, 17th ed., Brockhaus, Wiesbaden, 1966–1975, 22 vols. (in progress).

Cassell's Encyclopedia of World Literature, Cassell, London, 1973, 3 vols.

Childcraft—The How and Why Library, Field Enterprise Educational Corp., Chicago, 15 vols., annual.

Collier's Encyclopedia, Collier, New York, 24 vols., annual.

Columbia Viking Desk Encyclopedia, Dell, New York, 1964, paperback.

Compton's Pictured Encyclopedia and Fact-Index, Compton, Chicago, 24 vols., annual.

Enciclopedia italiana di scienze, lettere ed arti, Instituto della Enciclopedia Italiana, Rome, 1929–1937, 35 vols.

Enciclopedia universal ilustrada europeo-americana, Espasa, Barcelona, 1905–1933, 80 vols.

Encyclopaedia Judaica, Macmillan, New York, 1972, 16 vols.

Encyclopaedia of Religion and Ethics, Scribner, New York, 1908–1927, 12 vols. and index.

Encyclopaedia of the Social Sciences, Macmillan, New York, 1930–1935, 15 vols.

Encyclopedia Americana, Encyclopedia Americana, New York, Chicago, 30 vols., annual.

Encyclopedia Canadiana, Canadiana Co., Ottawa, 10 vols., annual.

The Encyclopedia of Education, Macmillan, New York, 1971, 10 vols.

Encyclopedia International, Grolier, New York, 20 vols., annual.

Encyclopedia of Library and Information Science, Dekker, New York, Vol. 1–, 1968– (in progress).

Encyclopedia of Philosophy, Macmillan, New York, 1967, 8 vols.

Encyclopedia of the Social Sciences, Macmillan, New York, 1930–1935, 15 vols.

Encyclopedia of World Art, McGraw-Hill, New York, 1959–1968, 15 vols.

Funk and Wagnalls New Encyclopedia, Funk and Wagnalls, New York, 27 vols., annual.

Golden Book Encyclopedia, Golden Press, New York, 1969, 16 vols.

The Great Soviet Encyclopedia: A Translation of the Third Edition, Crowell Collier and Macmillan, London, 1973–, 30 vols.

Grove, Sir George, *Dictionary of Music and Musicians*, 5th ed., St. Martin's, New York, 1955, 9 vols.

International Encyclopedia of the Social Sciences, Macmillan and the Free Press, New York, 1968, 17 vols.

Lincoln Library of Essential Information, Frontier Press Co., Columbus, Ohio, 1976, 2 vols.

McGraw-Hill Encyclopedia of Science and Technology, McGraw-Hill, New York, 1971, 15 vols.

McGraw-Hill Encyclopedia of World Biography, McGraw-Hill, New York, 1972, 12 vols.

McGraw-Hill Encyclopedia of World Drama, McGraw-Hill, New York, 1972, 4 vols.

Merit Students Encyclopedia, Macmillan Educational Corp., New York, 20 vols.

Meyers enzyklopädisches Lexikon, Bibliographisches Institut, Mannheim, 1971–1975, 14 vols.

Meyers neues Lexikon in acht Banden, 9th ed., VEB Bibliographisches Inst., Leipzig, 1961–1964, 8 vols.

Monroe, Paul, *Cyclopedia of Education*, Gale, Detroit, 1968, 5 vols.

The New Book of Knowledge, Grolier, New York, 20 vols., annual.

The New College Encyclopedia of Music, Norton, New York, 1960.

The New Columbia Encyclopedia, Columbia Univ. Press, New York, 1975.

The New Encyclopaedia Britannica, 15th ed., Encyclopaedia Britannica, Chicago, 30 vols., annual.

Our Wonderful World: An Encyclopedic Anthology for the Entire Family, Grolier, New York, 18 vols., annual.

Oxford Companion to Art, Oxford Univ. Press, New York, 1970.

Oxford Companion to Music, 10th ed., Oxford Univ. Press, New York, 1970.

The Oxford History of English Literature, Clarendon Press, Oxford, 1945–1963, 12 vols.

Penguin Encyclopedia, Penguin Books, Baltimore, Md., 1966.

Praeger Encyclopedia of Art, Encyclopaedia Britannica, Chicago, 1971, 5 vols.

The Random House Encyclopedia, Random House, New York, [1977].

World Book Encyclopedia, Field Enterprise Educational Corp., Chicago, 22 vols., annual.

YEARBOOKS

Definition

Yearbooks and annuals are sources issued each year to review developments during the year and to record current information of a descriptive or statistical type.

Uses and Types

Within his reference experience the associate author of this article remembers many yearbook and annual questions but none more vividly than one involving a recently appointed chairman of a college class reunion. To furnish ideas around which the reunion could revolve, he needed such information as what the styles were in automobiles and clothing, and the popular song hits of the year of his graduation. From among the three types of yearbooks—encyclopedia supplements, almanacs, and subject records of progress—the class reunion chairman was able to locate many valuable ideas for the reunion within encyclopedia supplements.

All of the adult, United States, comprehensive encyclopedias issue encyclopedia supplements. The *Americana Annual*, for example, has been bringing the *Encyclopedia Americana* up to date since 1923. The date incorporated into the title corresponds to the date of publication, although the events covered are those of the previous year. Subjects included in the *Americana Annual* record the progress made within the year for subjects treated in the body of the encyclopedia. Also included in the annual are new subjects that have arisen during a given year. Represented in the *Americana Annual*—as in encyclopedia supplements typically—is information relating to biography and necrology.

When one says almanac, reference is usually being made to the *World Almanac and Books of Facts*, and associated with the word almanac is coverage of an extremely wide range of topics. The reader might consult the *World Almanac* for sports records, maps, and major events of a year, as well as for biographical and geographical information. Ironically, the *World Almanac* is not the oldest such source, having been preceded by *Whitaker's Almanack* and *Thomas' Old Farmer's Almanack*; and rarely do users consult the *World Almanac* for information relating to the calendar, which is the essential function of almanacs in general. The *World Almanac* and *Whitaker's* may be said to complement each other because many of the same subjects are treated in both sources, but from opposite sides of the Atlantic Ocean; *Whitaker's* might be said to be the *World Almanac* with a British accent.

"What developments took place in book publishing within the past 5 years?" can be answered by *The Bowker Annual of Library and Book Trade Information*, an example of the third type of annual, known as the subject record of progress. Much directory-type information is included that relates to librarianship and book publishing. Statistical information in both fields is well represented in *The Bowker Annual*.

EXAMPLES OF YEARBOOKS

An Almanack [Whitaker's Almanac], Whitaker, London, 1869–, annual.

Americana Annual, Americana Corp., New York, 1923–, annual.

American Reference Books Annual, Libraries Unlimited, Littleton, Colo., 1970–, annual.

The Bowker Annual of Library and Book Trade Information, Bowker, New York, 1956–, annual.

Britannica Book of the Year, Encyclopaedia Britannica, Chicago, 1938–, annual.

Canadian Almanac and Directory, Copp Clark Co., Toronto, 1847–, annual.

Collier's Yearbook, Collier, New York, 1939–, annual.

International Yearbook and Statesmen's Who's Who, Burke's Peerage, London, 1953–, annual.

Magill's Literary Annual, Salem Press, New York, 1954–, annual.

McGraw-Hill Yearbook of Science and Technology, McGraw-Hill, New York, 1962–, annual.

Negro Almanac, 2nd ed., Bellwether, New York, 1971.

Official Associated Press Almanac, Quadrangle Books, Chicago, 1969–, annual.

(Old) Farmer's Almanac, Yankee Inc., Dublin, N.H., 1792–, annual.

Reader's Digest Almanac, Reader's Digest Assoc., New York, 1966–, annual.

Statesman's Year-book, Macmillan, London, New York, 1864–, annual.

World Almanac and Book of Facts, World Telegram, New York, 1868–, annual.

World Book Year Book, An Annual Supplement, Field Enterprise Educational Corp., Chicago, 1922–, annual.

Yearbook of the United Nations, UN, Dept. of Public Information, New York, 1947–, annual.

MANUALS

Definition

Manuals, or instruction and rule books, are so varied in the subjects that they cover that one type of manual or another should appeal to every person. Questions relating to manuals are usually prefaced by the words, "how can you . . .?" or "how do you . . .?" and they involve doing, making, or performing something.

Uses and Types

For purposes of illustration, seven types of manuals will be discussed here: (*a*) cookbooks, (*b*) health and first aid, (*c*) home maintenance, (*d*) etiquette and correspondence, (*e*) recreation, (*f*) handicrafts and hobbies, and (*g*) professional manuals.

Cookbooks come and go, but since 1896 one has remained a favorite for generations of homemakers: *The All New Fannie Farmer Boston Cooking-School Cookbook*. This famous cookbook contains the trusted American favorite recipes as well as some less familiar but equally delicious specialities. Although neither malice nor logic underlies our following cookbooks with health and first aid manuals, one can-

not deny that the use of the former source is sometimes followed by the need for the latter. Pamela Do Carmo's *First Aid Principles and Procedures*, published in 1976 by Prentice-Hall, gives overall coverage to the topic. Within the area of home maintenance the standard manual *Henley's 20th Century Book of Formulas, Processes and Trade Secrets* has taken on added significance for today's economy-minded homemakers who find it useful to know how to make soap, beverages, cheese, and other products useful in the home and industry. Two etiquette and correspondence books that are written from contrasting points of view are Emily Post's *Etiquette* and Amy Vanderbilt's *New Complete Book of Etiquette*. Since 1928, when the first edition of Emily Post's work was published, her *Etiquette* has been the authoritative source for social conduct for individuals whose incomes are well above the average; Vanderbilt's source has served a similar function for individuals of average income. The *Standard Postage Stamp Catalogue*, published by Scott Publications, is a price list that has become the standard manual for stamp collectors throughout the United States. The question "How do you do reference work?" is one example that can be answered through a professional manual. William A. Katz's *Introduction to Reference Work* and Louis Shores's *Basic Reference Sources* are works that have assisted in the professional education of various generations of reference librarians.

EXAMPLES OF MANUALS

American Red Cross, *First Aid Textbook for Juniors*, Blakiston, New York, 1949.

Complete Home Doctor (formerly the *Family Physician*), Arco, New York, 1957.

Do Carmo, Pamela, *First Aid Principles and Procedures*, Prentice-Hall, New York, 1976.

Hiscox, G. D., *Henley's 20th Century Book of Formulas, Processes and Trade Secrets*, Books, New York, 1957.

Kingery, Robert, *How to Do It Books*, Bowker, New York, 1950.

The New Emily Post's Etiquette, Funk and Wagnalls, New York, 1975.

Seymour, E. L. D., *New Garden Encyclopedia*, rev. ed., Wise, New York, 1946.

Taintor and Monroe, *Secretary's Handbook*, rev. ed., Harcourt, Brace, New York, 1973.

Turabian, Kate L., *A Manual for Writers of Term Papers, Theses, and Dissertations*, 4th ed., Univ. of Chicago Press, Chicago, 1973.

Vanderbilt, Amy, *New Complete Book of Etiquette: The Guide to Gracious Living*, Doubleday, New York, 1972.

Woman's Home Companion Cook Book, Collier, New York, 1950.

Woman's Home Companion Household Book, Collier, New York, 1950.

BIOGRAPHICAL SOURCES

Definition

Works that contain data about people, or biographical sources, form a large part of the literature of reference. Their abundance can be explained simply: people are

interested in people. Television viewers who see a favorite actor or actress in a film of an earlier era often ask, "How old is he or she?" "What is his religion?" and "What does she do for hobbies?" Such questions are best answered through biographical sources.

Uses and Types

Biographical questions can be classified as follows: (*a*) notables: living and dead, including statesmen, soldiers, explorers, scientist–inventors, athletes, artists, philosophers, religious leaders; (*b*) specialists: in the sciences, social science, humanities; in the professions of law, medicine, teaching, engineering; in the trades, business, and industry; (*c*) socialites: including royalty, nobility, first families, social club members; (*d*) "We, the People": in all walks of life, in telephone and city directories, on store signs, in news notices (*23*).

To answer these questions, three classes of sources have been designed:

Universal biographical dictionaries
Retrospective biographical dictionaries
Current biographical dictionaries

Since 1943, when *Webster's Biographical Dictionary* was first published, it has been the most commonly known example of a universal biographical dictionary. Its approximately 40,000 names include all times, races, nationalities, and occupations. A helpful feature is the pronunciation given for names.

The British *Dictionary of National Biography* is an outstanding retrospective biographical dictionary. Describing it, Louis Shores stated:

> The *Dictionary of National Biography* (cited as D.N.B.) was begun in 1882 by George M. Smith of the publishing firm of Smith, Elder, and Company. Leslie Stephen was appointed editor and Sidney Lee assistant editor of the following year. Lists of names were compiled letter by letter throughout the alphabet, and writers qualified to write about them were sought. The first volume appeared in 1885 and succeeding volumes quarterly thereafter until the 66 volumes covering the alphabet were completed in 1900.
>
> The whole work contains biographies of 29,120 individuals "of British or Irish race who have achieved any reasonable measure of distinction in any walk of life; every endeavour has been made to accord admission to every statesman, lawyer, divine, painter, author, inventor, actor, physician, surgeon, man of science, traveller, musician, soldier, sailor, bibliographer, book collector, and printer whose career presents any feature which justified its preservation from the oblivion." Early settlers in America have also been included on the same basis.
>
> Commenting on the problem of selecting names for inclusion, Sir Sidney Lee wrote:
>
> Actions, however beneficient or honourable, which are accomplished or are capable of accomplishment by many thousands of persons are actions of mediocrity, and lack the dimension which justifies the biographer's notice. The fact that a man is a devoted husband and father, an efficient schoolmaster, an exemplary parish priest, gives him in itself no claim to biographical commemoration.
>
> Statistics concerning the distribution of biographies contribute many interesting

> facts. For example, the sixteenth century appears to have had more great men in proportion to the total population than any other, although, as would be expected, the nineteenth century contributes the greatest number of names. The longest single article in the *Dictionary of National Biography* is that on Shakespeare, which covers 49 pages. Other long articles are those on the Duke of Wellington, 34 pages; Francis Bacon, 32 pages; Oliver Cromwell, 32 pages; and Queen Elizabeth, 28 pages (*24*).

Librarians remember the scope of the *DNB* by associating with it the description, "dead, noted, British."

To most people *Who's Who in America*, which is representative of current biographical dictionaries, is the best known biographical source. Begun in 1899, it has been issued biennially. Currently, *Who's Who in America* lists over 73,000 names. Criteria for selection are: those selected on account of special prominence in creditable lines of effort, and those included as a matter of policy on account of official position. To supplement *Who's Who in America*, the publisher (Marquis) also issues four regional volumes covering the East, Midwest, West, and South and Southwest. Retrospectively, *Who Was Who in America* backs up the various United States biographical sources.

Keeping current biographical sources up to date is a constant problem of reference librarianship. *The New York Times Biographical Service*, issued monthly in loose-leaf formats, offers a functional answer to this problem.

"What are the qualifications of the writer who wrote about the reference process?" is a question that can be answered through consulting current biographical dictionaries under the entries "Katz, William A." and "Shores, Louis A."

Before we leave our consideration of biographical sources, we wish to give one word of caution about information found therein. The general public tends to consider data found in biographical sources as nearly sacred for the reasons that they are in printed form and they come from one "who's who" or another. Any experienced reference librarian is aware of the amount of conflicting data that can easily be located about individuals through the use of various biographical sources. To understand the underlying reasons for this occurrence, one must understand the nature of information contained in the "who's who" type sources; it is gathered from questionnaires submitted by the biographees and is generally unverified. Individuals completing questionnaires for such sources are subject to the same lapses of memory as all of us, and occasionally they purposely falsify information. Falsification was made vivid once to the associate author of this article.

> While I was an assistant professor, I was once befriended by a student rather older than I who had decided to pursue study for a bachelor's degree at the southern state university where I was teaching. While waiting to go to dinner with this friend, I saw on his coffee table a biographical dictionary relating to his field of endeavor. As I handled the book, it fell open quite easily to a page bearing an entry for my friend's name, so I read with interest. The entry stated, to my surprise, that my friend had, according to the source, an M.B.A. from a prominent business school in the United States. In great surprise, I asked, "Peter, do you have a master's degree in business administration?" to which he replied, "Yes." Then I countered, "If you already have a master's degree from so prominent a

university as X, why are you now working toward a bachelor's degree?" To which Peter replied, "Rich, I don't really have the M.B.A., but I've stated it so often that I almost believe it myself." "How," I asked, "did you get listed in that biographical dictionary in the first place?" He thought for a while and replied, "I was the founder and first president of the X and Y association; consequently, I was visited by a representative from a certain publishing company for an interview relating to my entry in its biographical dictionary. When the representative asked me where I earned my business degree, I said X university." I almost gasped when I asked, "But, Peter, why did you choose so noted an institution as X?" to which he replied, "I had heard it was the best." That evening I received a quick lesson in the reasons behind contradictory or doubtful information in biographical dictionaries.

We hope that this anecdote does not cause the aspiring reference librarian to suspect every fact contained in biographical sources, but that he or she will learn the far greater lesson in reference: where accuracy of facts found in reference sources is critical to the questioner, the librarian should always advise the library user to verify the doubtful information in the primary source for the data; for example, if a birth date is in question, the searcher will have to consult the individual's birth certificate—not another reference source, where the information can also be in error or have been falsified.

EXAMPLES OF BIOGRAPHICAL DICTIONARIES

American Men and Women of Science, Bowker, New York, 1976, 7 vols.

Author's and Writer's Who's Who, 6th ed., Burke's Peerage, London, 1971.

Baker, Theodore, *Biographical Dictionary of Musicians*, 5th ed., Schirmer, New York, 1958.

Contemporary Authors, Gale Research, Detroit, 1962–, annual.

Current Biography, Wilson, New York, 1940–.

Dictionary of American Biography, Scribner, New York, 1974, 10 vols.

Dictionary of National Biography, Scribner, New York, 1974, 10 vols.

International Who's Who, Europa Publications, London, 1935–, annual.

McGraw-Hill Modern Men of Science, McGraw-Hill, New York, 1966–1968, 2 vols.

National Cyclopaedia of American Biography, White, New York, 1892–1971, 53 vols.

The N.Y. Times Biographical Edition, New York Times, New York, 1970–, monthly.

Rogers, J. A., *World's Great Men of Color*, Macmillan, New York, 1973, 2 vols.

Sobel, Robert, *Biographical Directory of the U.S. Executive Branch, 1774–1971*, Greenwood, Westport, Conn., 1971.

Thomas, Joseph, *Universal Pronouncing Dictionary of Biography and Mythology*, 5th ed., Lippincott, Philadelphia, Pa., 1930.

Webster's Biographical Dictionary, Merriam, Springfield, Mass., 1974.

Who Knows— and What? Marquis, Chicago, 1949–.

Who's Who in America, Marquis, Chicago, 1899–.

Who's Who in Canada, International Press, Toronto, 1922–.

Who's Who in Commerce and Industry, Marquis, Chicago, 1936–.

Who's Who in Communist China, Union Research Institute, Hong Kong, 1971, 2 vols.

Who's Who in Latin America, Blaine Ethridge Books, Detroit, 1971, 2 vols.

Who's Who in Music, 6th ed., Hafner, New York, 1972.

Who's Who in the World, 2nd ed., Marquis, Chicago, 1973.

Who's Who of American Women, Marquis, Chicago, 1959–, biennial.

Who Was Who, St. Martin's Press, London, 1929–, decennial.

Who Was Who in America, Marquis, Chicago, 1897–1973, 6 vols.

Who Was Who in the U.S.S.R., Scarecrow, Metuchen, N.J., 1972.

INDEXES

Definition

Our confused freshman—who must be considerably more enlightened after this lengthy search process—also wanted to locate articles written by the individual who wrote about the reference process. For this request he should consult indexes, or reference sources specifically designed to locate items within sources. Because abstracts are closely related in function to indexes, definitions differentiating the terms are appropriate here.

> An index is a systematically arranged list giving enough information about each item to enable it to be identified and traced. An abstract is a summary of a publication or article accompanied by an adequate bibliographical description to enable the publication or article to be traced (*25*).

Uses and Types

Indexes may be used to locate periodical articles, chapters in books, pamphlets, songs, speeches, poems, and editorials. Five types of indexes have been devised for such searches: (*a*) indexes to indexes, (*b*) indexes to collections, (*c*) periodical indexes, (*d*) news indexes, (*e*) pamphlet indexes.

Corresponding to the first type of index is an old, never revised, but still useful source: ALA Junior Members Round Table, *Local Indexes in American Libraries* (Faxon, Boston, 1947). This source lists the many in-house indexes prepared in libraries throughout the United States. "Homemade indexes" are compiled by library staff to supply information requests that are not satisfied by commercial indexers, such as the H. W. Wilson Company. A city's local newspaper or periodical may be the source for so many reference questions that librarians consider it convenient to analyze their contents in local or "homemade indexes."

Indexes to collections may be illustrated through the *Essay and General Literature Index*, prepared by the H. W. Wilson Company. Covering the period 1900 to the present time, this source provides listings of essays by a given author, identification of authors when only an essay's title is known, material on topics that form only parts of a book, and critical essays about books and people.

A familiar example of the periodical index is the *Readers' Guide to Periodical Literature*. Describing the function of the *RG*, the Wilson company states:

> Each article in 159 magazines is indexed by author, appropriate subject entries, and title entries for stories. Each author and subject entry includes the author's name, title of the article, and all relevant bibliographic information including the name of the periodical, volume number, inclusive paging of the article, date of publication, and notations of illustrations, bibliographies or other descriptive information (*26*).

Sample entries and a list of the periodicals indexed in the *Readers' Guide* are shown in Figures 9 and 10.

Newspapers are some of the least indexed of reference sources. Only a few of the leading newspapers of the world are indexed; the outstanding example is the *New York Times Index*. Although the runs from September 1851 to 1912 are inadequately covered in terms of contemporary bibliographic requirements, from 1913 to the present time the indexing varies from adequate to excellent. A special feature of the index is the incorporation of charts, tables, and graphs, taken either from the newspaper articles or, at times, originally prepared for the index.

Representing the last category of indexes is the *Vertical File Index*. Another Wilson publication, it lists free and inexpensive pamphlets, booklets, leaflets, and mimeographed material useful for all types of libraries.

EXAMPLES OF INDEXES

American Library Association, Junior Members Round Table, *Local Indexes in American Libraries: Union List of Unpublished Indexes*, Faxon, Boston, 1947.

Applied Science and Technology Index, Wilson, New York, 1958–, monthly.

Art Index, Wilson, New York, 1929–.

Biography Index: A Cumulative Index to Biographical Material in Books and Magazines, Wilson, New York, 1947–, quarterly.

Biological Abstracts, Bio-Science Information Service, Philadelphia, Pa., 1926–, semimonthly.

Biological and Agricultural Index, Wilson, New York, 1964–, monthly.

Business Periodicals Index, Wilson, New York, 1958–, monthly.

The Catholic Periodical and Literature Index, Catholic Library Association, Haverford, Pa., 1930–, bimonthly.

Chemical Abstracts, American Chemical Society, Columbus, Ohio, 1907–, weekly.

Congressional Index, Commerce Clearing House, Washington, D.C., 1937–, weekly.

Eakin, Mary K., *Subject Index to Books for Intermediate Grades*, 3rd ed., ALA, Chicago, 1963.

Eakin, Mary K., and Eleanor Merrit, *Subject Index to Books for Primary Grades*, 3rd ed., ALA, Chicago, 1967.

Education Index, Wilson, New York, 1929–.

Essay and General Literature Index, Wilson, New York, 1934–.

Granger's Index to Poetry, Columbia Univ. Press, New York, 1973.

Index Medicus, National Library of Medicine, Washington, D.C., 1879–.

ENVIRONMENTAL movement
Cross-country action line. M. Frome. Field & S 79:46+ My '74
Early giants. B. Vogt. Outdoor Life 153:104+ Je '74
Fighting Goliath without a slingshot. J. H. Douglas. il Sci N 105:371-2 Je 8 '74
Is environmentalism a passing fad? two opposing views. J. S. Bowman; C. Schoenfeld. Am For 80:28-30 Je '74
Of conservationists and their critics P. W. Quigg. Sat R World 1:35-6 Je 1 '74
Wilderness and the American mind, by R. Nash. Review
Liv Wildn 38:52-3 Spr '74. P. H. Oehser
Women who'd rather fight than twitch. B. Asbell. il pors Todays Health 52:20-3+ Je '74

Exhibitions
See also
International exposition on the environment, 1974

Photographs and photography
Shows we've seen; Our only world. D. G. Turner. il Pop Phot 74:147+ My '74

ENVIRONMENTAL news
Earthbeat. E. Zahniser. Liv Wildn 38:43-6 Spr '74
One earth; ed by P. W. Quigg. Audubon 76:124-5 Ja; 104-5 Mr; 108-9 My '74

ENVIRONMENTAL policy
Environment update; review of environmental materials and developments in 1973. G. Siehl. bibl il por Lib J 99:1357-63 My 15 '74
Letter from Washington. See issues of Living wilderness
Quality of growth. R. E. Train. Science 184: 1050-3 Je 7 '74
Tight end of the pond. M. Frome. Field & S 79:40+ Je '74
See also
Conservation of resources
Environmental law
United States—Council on environmental quality

International aspects
See also
United Nations—Environmental programme

Maine
Maine pilgrimage, by R. Saltonstall, Jr. Review
Nation 219:53-5 Jl 20 '74. H. Yglesias

Oregon
Oregon bottle law: prime example of conflict over recycling. il U.S. News 76:66 My 13 '74

Tennessee
Most polluted city in U.S. shows the way to clean up; Chattanooga. il U.S. News 76:81-3 Je 17 '74

ENVIRONMENTAL psychology
Environment and cognition, ed by W. Ittelson. Review
Archit Rec 155:43 Ap '74. C. W. Taylor and W. D. Veneklasen

ENVIRONMENTAL sciences
Instrumental analysis in environmental chemistry. D. H. Stedman and P. A. Meyers. bibl il BioScience 24:277-82 My; 346-9 Je '74

ENVY
Buried envy. G. P. Elliott. il Harper 249:12+ Jl '74
See also
Jealousy

FIGURE 9. *Sample entries from the* Readers' Guide to Periodical Literature, *reproduced by permission of the H. W. Wilson Company, publisher.*

___Aging
___America
___American Artist
___The American City
___American Education
___American Forests
___*American Heritage
___The American Historical Review
___American History Illustrated
___American Home
___American Image
___American Libraries
___The American Record Guide
___The American Scholar
___The American West
___Americas
___The Annals of the American Academy of Political and Social Science
___Antiques
___Architectural Record
___Art in America
___Art News
___*The Atlantic
___Audubon
___Aviation Week & Space Technology
___*Better Homes and Gardens
___BioScience
___Business Week
___Camping Magazine
___Car and Driver
___Ceramics Monthly
___*Changing Times
___Chemistry
___The Christian Century
___Christianity Today
___The Clearing House
___Commentary
___Commonweal
___Congressional Digest
___Conservationist (Albany)
___*Consumer Reports
___*Consumers' Research Magazine
___Craft Horizons
___Current
___Current History
___Dance Magazine
___The Department of State Bulletin
___Design
___Dun's
___*Ebony
___*The Education Digest
___English Journal
___Environment
___Esquire
___*Farm Journal (Central edition)
___Field & Stream
___Film Quarterly
___Flying
___Focus
___Forbes
___*Foreign Affairs
___*Fortune
___*Good Housekeeping
___Harper's Bazaar
___*Harper's Magazine
___Harvard Business Review
___*High Fidelity and Musical America
___Hobbies
___*Holiday
___*Horizon
___The Horn Book Magazine
___Horticulture
___Hot Rod
___House & Garden incorporating Living for Young Homemakers
___House Beautiful
___Intellect
___International Wildlife
___*Ladies' Home Journal
___Library Journal
___The Living Wilderness
___MH
___McCall's
___Mademoiselle
___Mechanix Illustrated
___Modern Photography
___Monthly Labor Review
___Motor Boating & Sailing
___Motor Trend
___Ms.
___*The Musical Quarterly
___The Nation
___*National Geographic Magazine
___National Parks & Conservation Magazine
___*National Review
___National Wildlife
___Nation's Business
___*Natural History
___The Negro History Bulletin
___New Catholic World
___The New Republic
___The New York Times Magazine
___The New Yorker
___*Newsweek
___Oceans
___Opera News
___Organic Gardening and Farming
___Outdoor Life
___The PTA Magazine
___Parents' Magazine & Better Homemaking
___Parks & Recreation
___Physics Today
___Plays
___Poetry
___Popular Electronics including Electronics World
___*Popular Mechanics
___Popular Photography
___Popular Science
___The Progressive
___Psychology Today
___Publishers' Weekly
___Radio-Electronics
___Ramparts
___*Reader's Digest
___Redbook
___*Retirement Living
___The Saturday Evening Post
___*Saturday Review World
___Scholastic Teacher Junior/Senior High Teacher's Edition
___School Arts
___Science
___Science and Public Affairs
___Science Digest
___Science News
___*Scientific American
___Sea Frontiers
___Senior Scholastic including World Week (Teacher's edition)
___*Seventeen
___Sky and Telescope
___Smithsonian
___Society
___Space World
___*Sports Illustrated
___Successful Farming (Midwest edition)
___Sunset (Central edition)
___Time
___Today's Education
___*Today's Health
___Travel
___UN Monthly Chronicle
___The UNESCO Courier
___*U.S. News & World Report
___Vital Speeches of the Day
___Vogue
___Weatherwise
___Wilson Library Bulletin
___*The Writer
___Writer's Digest
___Yachting
___The Yale Review

*Available for blind and other physically handicapped readers on talking books, in braille, or on magnetic tape. For information, address Division for the Blind and Physically Handicapped, Library of Congress, Washington, D.C. 20542.

FIGURE 10. *A list of periodicals indexed in the* Readers' Guide to Periodical Literature.

Index to Legal Periodicals, Wilson, New York, 1908–, monthly.

International Index, Wilson, New York, 1915–1965.

Ireland, N. O., *An Index to Indexes*, Faxon, Boston, 1942.

Library Literature, 1921/32–, Wilson, New York, 1934–, bimonthly.

Medlars (Medical Literature Analysis and Retrieval System), National Library of Medicine, Bethesda, Md., 1960–.

National Observer Index, Dow Jones Books, Princeton, N.J., 1969–.

Nicholsen, Margaret, *People in Books: A Selective Guide to Biographical Literature Arranged by Vocations and Other Fields of Reader Interest*, Wilson, New York, 1969.

The N.Y. Times Book Review, New York Times, New York, 1896–, weekly.

N.Y. Times Index, New York Times, New York, 1913–.

The N.Y. Times Obituaries Index, 1858–1968, New York Times, New York, 1970.

Ottemiller's Index to Plays in Collections, 6th rev. enl. ed., Scarecrow Press, Metuchen, N.J., 1976.

P.A.I.S. Bulletin, Public Affairs Information Service, New York, 1915–, weekly.

Poole's Index to Periodical Literature, 1802–81, rev. ed., Houghton, Boston, 1891.

Quarterly Cumulative Index Medicus, American Medical Association, Chicago, 1927–1956, 60 vols.

Readers' Guide to Periodical Literature, 1900–, Wilson, New York, 1905–.

Vertical File Service Catalogue, Wilson, New York, 1932–, monthly.

Wall Street Journal Index, Dow Jones Books, Princeton, N.J., 1958–, monthly.

SERIALS

Definition

Current awareness, or "keeping up," is a necessary function of any well-informed individual, professional or layman. A serial—defined as "a publication issued in successive parts, usually at regular intervals, and, as a rule, intended to be continued indefinitely"—serves that function (*27*).

Uses and Types

Four types of summaries are indispensable to reference service: (*a*) lists of serials, (*b*) union catalogs of serials, (*c*) daily newspapers, and (*d*) news summaries. The representative source for lists of serials is *Ulrich's International Periodicals Directory*. First published in 1932, this source attempts to list over 40,000 periodicals from many countries of the world arranged according to subject emphases. Special features of *Ulrich's* include subscription information and a statement indicating where the periodical is indexed. For libraries doing interlibrary loan work, the *Union List of Serials in Libraries of the United States and Canada* is indispensable. It lists 157,000 serial titles and their locations in 835 United States and Canadian libraries. Reference work often requires consulting news-

papers, such as *The New York Times*, whose index provides full coverage of local, national, and international topics and includes such items as speeches, treaties, and the daily rate of exchange for currency. As a supplement to newspaper coverage, libraries may need digest summaries of news events throughout the world. Full coverage is provided in *Facts on File*, a weekly source that is issued in loose-leaf form.

EXAMPLES OF SERIALS

Atlantic Monthly, Atlantic Monthly, Boston, 1857–, monthly.

Ayer Directory of Publications, Ayer, Philadelphia, Pa., 1880–, annual.

Christian Science Monitor, Christian Science Monitor, Boston, 1908–.

Facts on File, a Weekly World News Digest, with Cumulative Index, Facts on File, New York, 1940, weekly.

Keesing's Contemporary Archives, Keesing's, London, July 1, 1931–, weekly.

The Library Journal, Bowker, New York, 1876–.

Life, Time, Inc., Chicago, 1936–1972.

The London Times, Times Newspapers, Ltd., London, 1785–.

Moody's Investors Service, Moody's Investors Service, New York, 1900–.

Newsweek, Newsweek, Inc., New York, 1933–.

New Yorker, New Yorker Magazine, Inc., New York, 1935–.

The New York Times, New York Times Co., New York, 1896–.

N. W. Ayer and Son's Directory of Newspapers and Periodicals, N. W. Ayer and Son, Inc., Philadelphia, Pa., 1890–, annual.

Reader's Digest, Reader's Digest Association, Inc., Pleasantville, New York, 1922–.

Readers' Guide to Periodical Literature, Wilson, New York, 1905–, semimonthly.

Saturday Evening Post, Saturday Evening Post Co., Indianapolis, Ind., 1971–, quarterly.

Saturday Review of Literature, Saturday Review, Inc., New York, 1924–.

Time, Time, Inc., New York, 1923–.

The Times Literary Supplement, Times Newspapers Ltd., London, 1902–, weekly.

Ulrich's International Periodicals Directory, Bowker, New York, 1932–, biennial.

Union List of Serials in Libraries of the United States and Canada, 3rd ed., Wilson, New York, 1965, 5 vols.

Willings Press Guide, Willings, London 1874–.

HANDBOOKS

Definition

A handbook is that type of reference source that supplies answers to questions of a specific nature, such as statistics, rules, wordings of quotations, etc. "How many books were published last year?" is one example of a statistical question that can be answered through the use of the *U.S. Statistical Abstract*.

Uses and Types

Although facts fall into so many categories that classification of handbooks is difficult, it is possible to identify at least six types of "fact books" or handbooks: (*a*) curiosities, (*b*) literary, (*c*) statistics, (*d*) documentary, (*e*) parliamentary and debate, and (*f*) specific subject handbooks. Undoubtedly the most popular of the curiosity handbooks is *The Guinness Book of World Records*. It contains information about superlatives of all types, including the biggest, smallest, highest, lowest, fastest, slowest, strongest, etc., things throughout the world. Although useful in all types of libraries, this work is especially popular in school libraries where it is usually presented for return by two children—one returning it and the other who wishes to borrow it. A popular example of literary handbooks is Benet's *The Reader's Encyclopedia*. This gold mine of literary information contains plots, characters, and data about writers. Indispensable to statistical reference is *Statistics Sources*, edited by Paul Wasserman and Joanne Paskar, and published by Gale Research. The work attempts to bring together "under specific subject headings information to guide its user to sources of numeric data about the United States and foreign countries," according to its preface. Whenever the need arises to locate the actual text of significant documents in our country's history, the librarian will have to consult Henry Steele Commager's *Documents of American History*, a source that illustrates the course of American history through its documents. Parliamentary and debate handbooks are closely associated with *Robert's Rules of Order*, a source that since 1876 has been the last word in assisting assemblies to conduct their meetings in a purposeful and orderly fashion. Numerous varieties of handbooks exist in specific areas. Among them is the *Handbook of Chemistry and Physics*, which—since 1913 when it was first published by the Chemical Rubber Company of Cleveland, Ohio—has gained a reputation for coverage and accuracy of data considered most useful by engineers, scientists, chemists, and physicists.

EXAMPLES OF HANDBOOKS

Benet, W. R., *Reader's Encyclopedia*, 2nd ed., Crowell, New York, 1965.

The Blue Guides, Ernest Benn, Ltd., London, 1918–, annual.

The Book of States, Council of State Governments, Lexington, Ky., 1935–, biennial.

Commager, H. S., *Documents of American History*, 9th ed., Appleton, New York, 1973.

Cyclopedia of Literary Characters, Harper and Row, New York, 1964.

Douglas, G. W., *American Book of Days*, Wilson, New York, 1948.

Fodor's Modern Guides, edited by Eugene Fodor, McKay, New York, 1953–.

The Guinness Book of World Records, Sterling Publishing Co., New York, 1955–, annual.

Handbook of Chemistry and Physics, Chemical Rubber Co., Cleveland, 1920–, annual.

Historical Statistics of the U.S. Colonial Times to 1957, U.S. Bureau of the Census, Washington, D.C., 1960.

Hotel and Motel Red Book, 1886–, American Hotel Association Directory Corp., New York, 1886–, annual.

Information Please Almanac, edited by Dan Golenpaul, Simon and Schuster, New York, 1947–, annual.

Kane, Joseph, *Famous First Facts,* 3rd ed., Wilson, New York, 1964.

Langer, W. L., *Encyclopedia of World History,* 5th ed., rev. and enl., Houghton Mifflin, Boston, Mass., 1972.

Levinson, Leonard, *Bartlett's Unfamiliar Quotations,* Cowles Book Co., New York, 1971.

Literary and Library Prizes, Bowker, New York, 1976.

Lovejoy's College Guide, 13th ed., Simon and Schuster, New York, 1976.

Minerva, Jahrbuch der gelehrten Welt, Walter de Gruyter, Berlin, 1891–, irregular.

Municipal Yearbook, 1934–: The Authoritative Résumé of Activities and Statistical Data of American Cities, International City Manager's Association, Chicago, 1934–, annual.

The New Century Cyclopedia of Names, Appleton-Century-Crofts, New York, 1954, 3 vols.

The Reader's Digest of Books, enl. ed., edited by Helen Keller, Macmillan, New York, 1936.

Representative American Speeches, Wilson, New York, 1922– (Reference Shelf Series).

Robert, Henry Martyrn, *Robert's Rules of Order,* Scott, Foresman, Chicago, 1970.

Stevenson, B. E., *Home Book of Quotations,* 10th ed., Dodd, New York, 1967.

U.S. Statistical Abstract—1878–, Government Printing Office, Washington, D.C., 1879–, annual.

Wasserman, Paul, and Joanne Paskar, *Statistics Sources,* 4th ed., Gale, Detroit, 1974.

World Almanac and Book of Facts, Doubleday, New York, 1868–, annual.

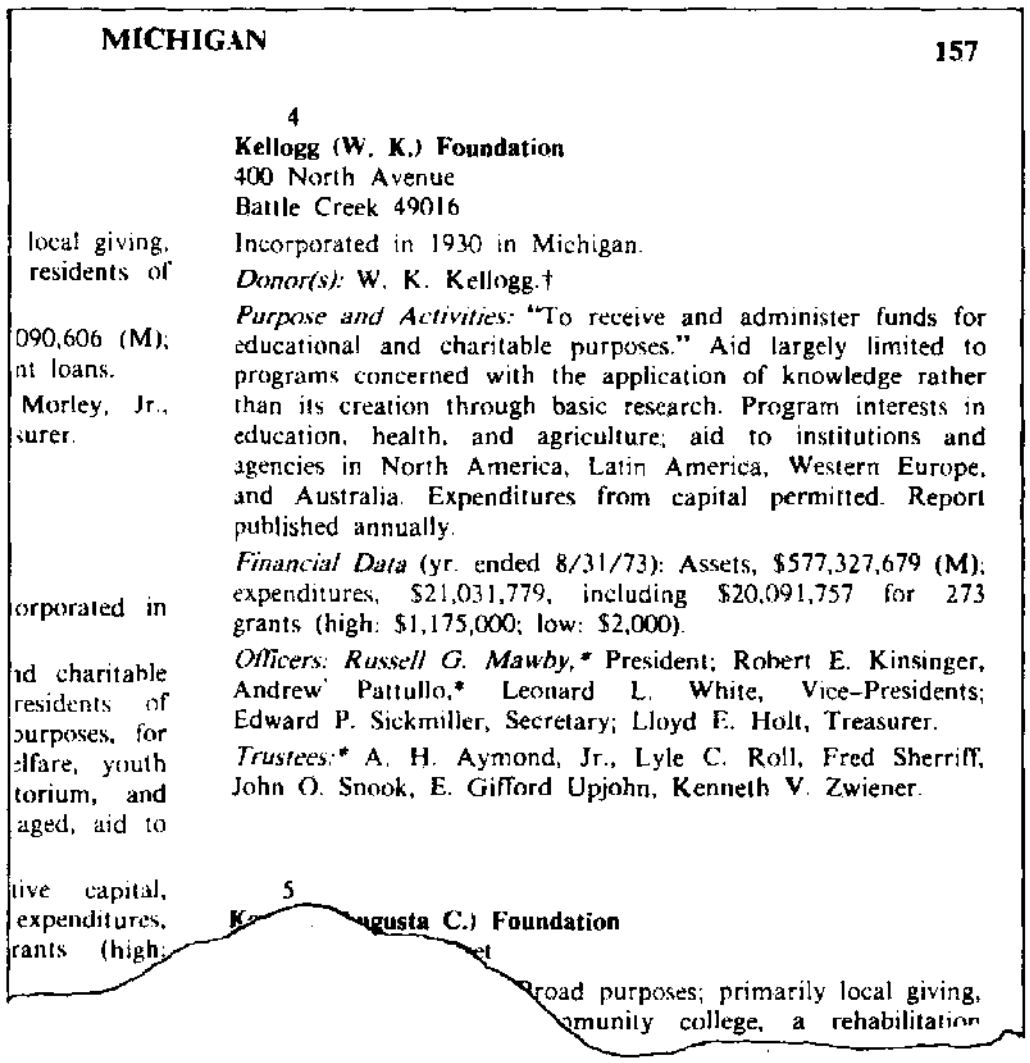
DIRECTORIES

Definition

Agency questions may relate to any one of at least six types of agencies: (*a*) learned societies; (*b*) professional and trade associations; (*c*) institutions; (*d*) firms, commercial and industrial; (*e*) clubs, lodges, fraternities, sororities, and social organizations; and (*f*) political groups. Such queries are referred to directories, sources that are defined as a list of persons or organizations, systematically arranged, usually in alphabetic or classed orders, giving addresses, affiliations, etc., for individuals; and address, officers, functions, and similar data for organizations.

Uses and Types

Directories may be arranged into two categories: international agencies and United States agencies. "What are the names and addresses of some reference book publishers?" is a typical directory question. A widely used source relating to international agencies is the *Yearbook of International Organizations,* published annually from 1948 to 1950 and biennially since 1951. Besides listing data about agencies, it also includes dates of international conferences and organization publications. Replacing *American Foundations and Their Fields,* the *Foundation Directory* is a comprehensive listing of foundations in the United States, listing their subjects of interest and assets (see Figure 11).



MICHIGAN 157

4
Kellogg (W. K.) Foundation
400 North Avenue
Battle Creek 49016

local giving, residents of

Incorporated in 1930 in Michigan.

Donor(s): W. K. Kellogg.†

090,606 (M); nt loans. Morley, Jr., surer.

Purpose and Activities: "To receive and administer funds for educational and charitable purposes." Aid largely limited to programs concerned with the application of knowledge rather than its creation through basic research. Program interests in education, health, and agriculture; aid to institutions and agencies in North America, Latin America, Western Europe, and Australia. Expenditures from capital permitted. Report published annually.

orporated in

Financial Data (yr. ended 8/31/73): Assets, $577,327,679 (M); expenditures, $21,031,779, including $20,091,757 for 273 grants (high: $1,175,000; low: $2,000).

id charitable residents of purposes, for elfare, youth torium, and aged, aid to

*Officers: Russell G. Mawby,** President; Robert E. Kinsinger, Andrew Pattullo,* Leonard L. White, Vice-Presidents; Edward P. Sickmiller, Secretary; Lloyd E. Holt, Treasurer.

*Trustees:** A. H. Aymond, Jr., Lyle C. Roll, Fred Sherriff, John O. Snook, E. Gifford Upjohn, Kenneth V. Zwiener.

tive capital, expenditures, rants (high;

5
K[illegible]ugusta C.) Foundation
[illegible]et
[illegible]road purposes; primarily local giving, [illegible]mmunity college, a rehabilitation

† Indicates individual is deceased.
(M) Market value of assets.
* Officer is also a trustee or director.
Italicized name indicates person to whom communications should be addressed.

FIGURE 11. *Sample entry from* The Foundation Directory, *published by the Columbia University Press.*

EXAMPLES OF DIRECTORIES

American Council on Education, *American Universities and Colleges,* 11th ed., American Council on Education, Washington, D.C., 1973.

Baird's Manual of American College Fraternities, George Banta, Menasho, Wis., 1879–.

Encyclopedia of Associations, Gale, Detroit, 1964–, biennial.

The Foundation Directory, Columbia Univ. Press, New York, 1960–, irregular.

National Faculty Directory 1977, 7th ed., Gale, Detroit, 1976, 2 vols.

The National Zip Code Directory, Government Printing Office, Washington, D.C., 1965–, annual.

The N.Y. Times Guide to Federal Aid for Cities and Towns, Quadrangle Books, Chicago, 1972.

Poor's Register of Corporation, Directors and Executives, Standard and Poor's Corp., New York, 1928–, annual.

Scientific, Technical, and Related Societies of the U.S., 9th ed., National Academy of Sciences, Washington, D.C., 1971.

Thomas' Register of American Manufacturers, 63rd ed., Thomas Publishing Co., New York, 1973.

U.S. Office of Education Directory, Government Printing Office, Washington, D.C., 1912–.

The World of Learning, 1975–1976, 26th ed., Gale, Detroit, 1976.

Yearbook of International Organizations, Union of International Associations, Brussels, 1948–, annual.

GEOGRAPHICAL SOURCES

Definition

Just as our freshman student of reference books asked "Where is Metuchen?" the reference librarian is frequently asked "place questions." They are answered by geographical sources, works containing locations, descriptions, and impressions of places throughout the world.

Uses and Types

Three classes of geographical sources will be mentioned here: (*a*) gazetteers, (*b*) guidebooks, and (*c*) atlases. An extremely popular gazetteer—noted for its accuracy, comprehensiveness, and low price—is *Webster's New Geographical Dictionary*. Containing more than 47,000 geographical names, *Webster's* is a compilation of the most frequently searched modern and historical place names. It gives location, area, population, points of interest, etc. Three companies—Baedeker, Fodor, and Muirhead—have published so large a variety of guidebooks that their works can only be mentioned here as a group rather than individually. Authoritative atlases are published by Rand McNally, the *Rand McNally New Cosmopolitan World Atlas*; and by Hammond, in their *Hammond Medallion World Atlas*. If one wishes the finest world atlas published today, he should consider *The Times Atlas of the World*, published by the *Times* of London.

EXAMPLES OF GEOGRAPHICAL SOURCES

American Guide Series, compiled by Federal Writer's Project, various publishers, 1937–1949.

Columbia Lippincott Gazetteer of the World, Columbia Univ. Press, New York, 1962.

The Grosset World Atlas, Grosset and Dunlap, New York, 1974.

Hammond Medallion World Atlas, Hammond, Maplewood, N.J., 1975.

The International Atlas, Rand McNally, Chicago, 1974.

National Geographic Atlas of the World, 4th ed., National Geographic, Washington, D.C., 1975.

The New Cambridge Modern History Atlas, edited by H. C. Darby and H. Fullard, Cambridge Univ. Press, New York, 1975.

The N.Y. Times Atlas of the World, Quadrangle, New York, 1972.

Rand McNally Commercial Atlas and Marketing Guide, Rand McNally, Chicago, 1876–, annual.

Rand McNally Cosmopolitan World Atlas, Rand McNally, Chicago, 1971.

The Times Atlas of the World, Times Publishing Co., London, 1955–1959, 5 vols.

Webster's New Geographical Dictionary, rev. ed., Merriam, Springfield, Mass., 1972.

The World Book Atlas, Field Enterprises, Chicago, 1972.

GOVERNMENT DOCUMENTS

Definition

An emphatic "yes" may be given to the question, "Does the United States government publish reference books?" In fact, the United States government is the world's largest publisher. Its reference books are all termed government documents, which have been defined as follows:

> Any publication printed at Government expense or published by authority of Congress or any Government publishing office, or of which an edition has been bought by Congress or any Government office for division among members of Congress or distribution to Government officials or the public, shall be considered a public document (*28*).

Uses and Types

Among the United States and foreign government documents, five types will be identified here: (*a*) congressional publications, (*b*) executive publications, (*c*) indexes and bibliographies, (*d*) documents of state and local governments, and (*e*) foreign and international documents. They may be said to have the following reference value:

1. Authority: The government's imprint alone should insure authority, in addition to which the reputations of the many specialists regularly and specially employed permit the librarian to place specific responsibility for individual works. Many government publications are recognized by the world of scholarship as "source" or "primary" material.
2. Economy: Most of the publications are available to libraries free or at very little cost.
3. Timeliness: In many fields results of research, news of recent discoveries, latest statistics, as well as reports of government activities are presented first in documents.
4. Readability: A great number of attractive publications planned with the general reader in mind are being issued. Indeed, at least one bookseller has been prosecuted for selling free government publications which were attractive enough in format to pass for commercial publications (*29*).

Basic to every collection of documents, and an example of a congressional publication, is the *United States Code*. It contains all permanent and general laws of the United States, arranged under divisions called titles and under subdivisions called chapters. Cumulative annual supplements are issued to keep the *United States Code* up to date. Among executive publications an indispensable title is the *Federal Register*. Since 1936 this publication has contained all presidential proclamations and executive orders. Also included are rules and regulations of the various parts of the government. To assist the librarian in developing the government document collection is the *Monthly Catalog of United States Government Publications*. Being a continuing listing of publications issued by all branches of the government, the *Monthly Catalog* enables the librarian to keep the collection current. Full bibliographic data, useful for verification and acquisitions purposes, are provided for each document listed. Serving a similar function for the documents issued by the states, territories, and possessions of the United States is the *Monthly Checklist of State Publications*. A valuable guide to the government publications issued throughout the world is James Bennett Childs's *Government Document Bibliography in the United States and Elsewhere*. In addition to listing the catalogs, guides, and indexes to documents of the United States, coverage is also given for comparable publications of the Confederate States of America, the states, foreign countries, and the League of Nations. Bibliographic listing of documents of the United Nations is provided through the *Checklist of United Nations Documents* (1946–1953) and the *United Nations Documents Index*, begun in 1950.

EXAMPLES OF GOVERNMENT PUBLICATIONS

Biographical Directory of the American Congress, 1774–1961, Government Printing Office, Washington, D.C., 1961.

Boyd, Anne Morris, *U.S. Government Publication*, 3rd ed. rev., Wilson, New York, 1952.

Childs, James Bennett, *Government Document Bibliography in the United States and Elsewhere*, 3rd ed., Government Printing Office, Washington, D.C., 1942.

The Congressional Record, Government Printing Office, Washington, D.C., 1873–, daily.

Congressional Staff Directory, 1959–, Congressional Staff Directory, Washington, D.C., 1959–, annual.

State Law Index: 1925/26–1947/48, Government Printing Office, Washington, D.C., Vols. 1–12, 1929–1949, biennial.

United Nations Demographic Yearbook, UNIPUB, New York, 1948–, annual.

United Nations Statistical Office, *Statistical Yearbook*, UNIPUB, New York, 1949–, annual.

United States Code, 1970 ed., Government Printing Office, Washington, D.C., 1971, 15 vols.

United States, *Federal Register*, Government Printing Office, Washington, D.C., March 14, 1936–, daily, except Sunday, Monday, and days following a legal holiday.

U.S. Bureau of the Census, Statistical Abstract of the U.S. 1878–, Government Printing Office, Washington, D.C., 1879–, annual.

U.S. Department of Labor, *Occupational Outlook Handbook*, Government Printing Office, Washington, D.C., 1929–, biennial.

U.S. Educational Research Information Center, *Research in Education*, Government Printing Office, Washington, D.C., 1966–, monthly.

U.S. Government Publications Monthly Catalog, Government Printing Office, Washington, D.C., 1895–.

U.S. Library of Congress, Exchange and Gift Division, Monthly Checklist of State Publications, Government Printing Office, Washington, D.C., 1910–, monthly.

U.S. Office of Education: Biennial Survey of Education, 1916/18–1956/58, Government Printing Office, Washington, D.C., 1921–1963.

U.S. Superintendent of Documents, *Monthly Catalog of United States Government Publications*, Government Printing Office, Washington, D.C., 1895–, monthly.

Yearbook of Agriculture, Government Printing Office, Washington, D.C., 1895–, annual.

AUDIOVISUAL SOURCES

Definition

Audiovisual sources may be defined as all media of communication other than the printed word.

Uses and Types

The following five classes are suggested as an approach to audiovisual sources: (*a*) community resources, (*b*) museum objects, (*c*) graphics, (*d*) projected materials, and (*e*) auditory materials. Any community has a variety of resources outside the library from which library users can observe processes that books merely describe. For the user who wishes to see how newspapers are published, after he or she has read about the experience, the publishing plant of the local newspaper can provide a valuable learning experience. Reference librarians should compile an inventory of local resources as an audiovisual supplement to the library. A similar inventory of resources contained in the local museum will prove equally useful. Jessie Croft Ellis's *Index to Illustrations* provides an approach to locating pictures in books and periodicals. A comprehensive guide to both projected and auditory materials may be found in the *Educational Media Index*. It lists the source, content, and cost of nonbook materials—including films, filmstrips, transparencies, maps, charts, flat pictures, videotapes, sound recordings, and programmed instructional materials—and provides numerous answers to the question, "What type of sources other than books illustrate the use of reference books?"

EXAMPLES OF GUIDES TO AUDIOVISUAL SOURCES

Audiovisual Marketplace, Bowker, New York, 1964–, biennial.

Clough, Francis F., and G. J. Cuming, *The World's Encyclopedia of Recorded Music*, Sidgwick and Jackson, London Gramophone Corp., New York, 1966.

Educational Media Index, McGraw-Hill, New York, 1964, 14 vols.

Ellis, Jessie Croft, *Index to Illustrations*, Faxon, Boston, 1966.

Kolodin, Irving, *The Guide to Long-Playing Records*, 1st ed., Knopf, New York, 1955, 3 vols.

Conclusions

We believe that reference books have undergone considerable development since the early encyclopedias of Aristotle, Varro, and Pliny. They have progressed quite a distance from the highly praised 18th-century French *Encyclopédie*. And, of course, reference books have progressed even further since the remote time when a caveman sketched the outline of an animal on stone and created the first visual.

Today's reference books—if we consider only our best examples—are authoritative; designed carefully to fit a defined scope; accurate, objective, and readable in treatment of information; logically arranged; appealing in format; and useful in their special features. Today's reference books are so effective in their potential for enabling users to locate needed information that reference books may be said to be the most efficient information retrieval devices devised by man. Even the most enthusiastic computer scientist would have to admit that compiling the *World Almanac* is certainly more cost-effective than programming the almanac's information into a computer. As a student of reference books for over 50 years, the senior author of this article believes that computer scientists and information scientists have a great deal to learn about information systems design that they could learn by studying the designs of our finest reference books—the *World Almanac*, for example. Nevertheless, reference books still require improvement, if they are to realize the potential for informing and education that is still unrealized in man. To elaborate this idea we conclude with some quotations referring to tomorrow's encyclopedia and reference tools of the future, selected from an earlier essay of the associate author:

> Acting on the premise that man's information is not received merely through his sight but from the impressions received from his hearing, touch, smell, and taste, I propose redefining the term encyclopedia as "a systematic summary of all of mankind's significant information and sensory impressions." A new dimension of sensory experience would be added to an encyclopedia by incorporating into its format "multi-media."
>
> Although the technology exists now to expand the gamut of impressions experienced by encyclopedia users, encyclopedists of today are tradition bound to visual impressions. The visual impact has been explored but only superficially. It can be increased by including cartridges of video and audio tape which could be reproduced on a "sensation simulator" resembling a color television set equipped with stereophonic sound. By experiencing preselected events and sensations, the encyclopedia user could watch spellbound as Moira Shearer recreates her unforgettable dancing in the "Red Shoes," "attend" a piano recital of Paderewski, or experience the suspense of Sandy Koufax pitching a no-hit ball game instead of just reading about them. In subjects which include aesthetic or emotional appeal, such as seeing sunlight stream through the stained glass windows of Chartres Cathedral, unless the user becomes excited as he finishes the article, the editor cannot say that the encyclopedia has succeeded in its purpose of providing a general education....
>
> In its first edition, the encyclopedia of the future with its abundance of audio-visual sensory devices will probably be so expensive that the family of average income may be unable to afford one. If such proves to be the case, publishers should issue the work in various editions, one for institutional use, inclusive of all the

devices necessary to contain the desired information and produce the relevant sensations, and another containing only the traditional format of today, for use by individuals and families of modest economic means. It may also be useful to publish different sensory editions for distinct audiences, e.g., one in braille, including devices producing tactile sensations might appeal to a blind person. If an encyclopedia is to contain "all the information significant to mankind," why should it appeal mainly to the sighted person? . . .

The addition of audio-visual and sensory experiences need not be restricted to encyclopedia publishing. By extension it could be applied to all types of reference books, such as dictionaries, biographical and geographical sources, handbooks, directories, etc. . . .

Textbooks should include reprints of all supplementary readings reproduced on microcards. Each textbook would be accompanied by a pack of microcards which the student could view on his portable reader, thus obviating the crowded conditions of many periodical reading rooms. Problems of copyright might arise, but I believe many of them could be overcome in the interests of advancing scholarship. Writers in academic or professional fields would probably be more willing to grant permission for microcard copies to be made of their articles than writers in popular periodicals. In the field of the humanities many valuable articles are sufficiently old that they would no longer be affected by the copyright law. . . .

By the use of multi-media to simulate sensory impressions, tomorrow's reference tools will make users far more than passive observers of events and facts. Readers will become participants, totally involved in the experience of information (*30*).

APPENDIX

Reference Book Publishers

Abaris Books, Inc.
Abingdon Press
Harry N. Abrams, Inc.
Addison-Wesley Publishing Company, Inc.
Aero Publishers, Inc.
Africana Publishing Company
Aldine Publishing Company
American Alliance for Health, Physical Education and Recreation
American Elsevier Publishing Company, Inc.
American Hospital Association
American Library Association
Amphoto
Anchor Society, Inc.
Ares Publishers, Inc.
Arlington House, Inc.
Arno Press, Inc.
Aspen Systems Corp.
Auerbach Publishers, Inc.
Auto Book Press
Avon Books
Award Books
Ballinger Publishing Company
Bantam Books, Inc.
Barlenmir House, Publishers
Barnes and Noble Books
Barron's Education Series, Inc.
Basic Books, Inc., Publishers
The Beehive Press
The Benjamin Company, Inc.
Chas. A. Bennett Company, Inc.
Berkley Publishing Corp.
Better Homes and Gardens Books
Books, Inc.
R. R. Bowker Company
Boyd and Fraser Publishing Company
Brigham Young University Press
British Book Centre, Inc.
Brooke House Publishers, Inc.
William C. Brown Company, Publishers
BUC International Corp.
Burgess Publishing Company
Butterick Publishers
Cadillac Publishing Company, Inc.
Cahners Books
Caratzas Bros. Publishers
Carrollton Press, Inc.

Jacques Cattell Press
Century House Publishing, Inc.
Chelsea House Publishers
Chicorel Library Publishing Corp.
Clearwater Publishing Company, Inc.
Cobblesmith
William Collins & World Publishing Company, Inc.
Columbia University Press
Congressional Quarterly, Inc.
Consolidated Book Publishers
Cooper Square Publishers, Inc.
Coward, McCann and Geoghegan, Inc.
Craftsman Book Company
Crane, Russak and Company, Inc.
Thomas Y. Crowell Company, Inc.
Da Capo Press, Inc.
David and Charles, Inc.
Marcel Dekker, Inc.
Dell Publishing Company, Inc.
Diplomatic Press, Inc.
Dodd, Mead and Company
Doubleday and Company, Inc.
Dover Publications, Inc.
Dowden, Hutchinson and Ross, Inc.
Dow Jones Books
Drake Publishers, Inc.
Dufour Editions, Inc.
Emerson Books, Inc.
Encyclopaedia Britannica, Inc.
Enterprise Publications
Paul S. Eriksson, Inc.
Facts on File, Inc.
Fairchild Publications, Inc.
Feminist Press
J. G. Ferguson Publishing Company
Field Enterprises Educational Corp.
Fleet Press Corp.
Folcroft Editions and Norwood Editions
Follett Publishing Company
Burt Franklin and Company, Inc.
Franklin Publishing Company
Free Press
Miller Freeman Publications, Inc.
Friends of the Earth
Fuller and Dees Marketing Group, Inc.
Funk and Wagnalls Publishing Company, Inc.
Gale Research Company
Gardner Press, Inc.
Garland Publishing, Inc.
Genealogical Publishing Company, Inc.
The K. S. Giniger Company, Inc.
Gordian Press, Inc.
Gordon and Breach, Science Publishers, Inc.
Gould Publications
Great Outdoors Publishing Company
Greenwood Press, Inc.
Newton K. Gregg/Publishers
Grolier, Inc.
Grosset and Dunlap, Inc.
Gulf Publishing Company, Book Division
Hammond, Inc.
Harper and Row, Publishers
Hart Publishing Company, Inc.
Haskell House Publishers, Inc.
Hastings House, Publishers, Inc.
Hawthorn Books, Inc.
Hearst Books
D. C. Heath and Company
Hebrew Publishing Company
Richard Heller and Son, Inc.
Herman Publishers, Inc.
Hippocrene Books, Inc.
Holden-Day, Inc.
Holmes and Meier Publishers, Inc.
Holt, Rinehart and Winston, Inc.
Hoover Institution Press
Horizon Press
Houghton Mifflin Company
Howell Book House, Inc.
HRAF Press
Humanities Press, Inc.
Inscape Corp.
International Arts and Sciences Press
Irvington Publishers, Inc.
Jenkins Publishing Company
Jossey-Bass, Inc., Publishers
Kennikat Press Corp.
Fred Kerner/Publishing Projects
B. Klein Publications, Inc.
Kodansha International/USA
R. E. Krieger Publishing Company, Inc.
Ktav Publishing House, Inc.
Larousse and Company, Inc.
Lenox Hill Publishing and Distribution Corp.
Lexicon Publications, Inc.
Lexington Books
Libraries Unlimited, Inc.
J. B. Lippincott Company
Little, Brown and Company

Litton Educational Publications, Inc.
The M.I.T. Press
MLP, Inc.
McGraw-Hill Book Company
David McKay Company, Inc.
Macmillan Educational Corp.
Mafex Associates, Inc.
Marquis Who's Who, Inc.
Mason/Charter Publishers, Inc.
G. and C. Merriam Company
Microcard Editions Books
Milford House, Inc.
Monarch Press
Moody Press
William Morrow and Company, Inc.
Multimedia Publishing Corp.
Music Sales Corp.
National Register Publishing Company, Inc.
Naval Institute Press
Nelson-Hall Publishers
The New American Library, Inc.
New York University Press
North American Publishing Company
Northern Illinois University Press
Noyes Data Corp.
Ohio State University Press
Oliver Press
Open Court Publishing Company
Oregon State University Press
Oriole Editions
Ottenheimer Publishers, Inc.
Our Sunday Visitor, Inc.
Oxford University Press, Inc.
Pacific Books, Publishers
Pathmark Books, Inc.
Paulist Press
Pelican Publishing Company, Inc.
Pendulum Press, Inc.
Penguin Books, Inc.
Pergamon Press, Inc.
Peterson's Guides, Inc.
Petrocelli/Charter
Phaeton Press, Inc.
S. G. Phillips, Inc.
Philosophical Library, Inc.
Phoenix Publishers
The Pierian Press
Pitman Publishing Corp.
Plenum Publishing Corp.
Pocket Books
Popular Library
Potomac Books, Inc.
Praeger Publishers, Inc.
Prentice-Hall, Inc.
Preservation Press
Publishing Center, Inc.
G. P. Putnam's Sons
Quadrangle/The New York Times Book Company
Raintree Publishers, Ltd.
R and E Research Associates
Rand McNally and Company
Random House, Inc.
Reston Publishing Company
Revisionist Press
Rio Grande Press, Inc.
Rockville House Publishing, Inc.
Routledge and Kegan Paul
Rowman and Littlefield
Russell and Russell Publishers
St. Martin's Press, Inc.
Porter Sargent Publishers, Inc.
Scarecrow Press, Inc.
Schenkman Publishing Company, Inc.
Schocken Books, Inc.
Scholarly Reprints, Inc.
Science Associates/International, Inc.
Scott, Foresman, & Co.
Charles Scribner's Sons
The Seabury Press, Inc.
Harold Shaw Publishers
The Shoe String Press, Inc.
Simon and Schuster, Inc.
Peter Smith
Smithsonian Institution Press
Southern Illinois University Press
Spectrum Publications, Inc.
Robert Speller and Sons, Publishers, Inc.
Springer-Verlag New York, Inc.
Standard Educational Corp.
Stein and Day Publishers
Sterling Publishing Company, Inc.
Stonehill Publishing Company
Straven Educational Press
Sun River Press
Swallow Press, Inc.
Tandem Press, Inc.
Teachers College Press
Three Continents Press
Todd Publications
Transatlantic Arts, Inc.
Frederick Ungar Publishing Company, Inc.
United Educators, Inc.

United Publishing Corp.
Unity Press
University College Tutors, Inc.
University of Alabama Press
University of Arizona Press
University of Chicago Press
University of Illinois Press
University of Miami Press
University of Minnesota Press
University Press of Hawaii
University Press of Virginia
University Society, Inc.
U.S. Historical Documents Institute
Van Nostrand Reinhold Company
Vineyard Books, Inc.
Walker and Company
Frederick Warne and Company, Inc.
Water Information Center
Watson-Guptill Publications
Franklin Watts, Inc.
We, Inc.
Western Publishing Company, Inc.
James T. White and Company
Whitston Publishing Company
John Wiley and Sons, Inc.
William Carey Library
The H. W. Wilson Company
William H. Wise and Company, Inc.
Wollstonecraft, Inc.
Workman Publishing Company, Inc.
World Book Encyclopedia, Inc.
The Writer, Inc.

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REFERENCES

1. *A.L.A. Glossary of Library Terms,* American Library Association, Chicago, 1943, p. 112.
2. Leo Tolstoy, *War and Peace,* International Collectors Library American Headquarters, Garden City, N.Y., n.d., pp. 16–17.
3. Louis Shores, *Reference as the Promotion of Free Inquiry,* Libraries Unlimited, Littleton, Colo., 1976, p. 14.
4. Carter Alexander, "Technique of Library Searching," *Special Lib.,* **27,** 23–28 (September 1936).
5. James I. Wyer, *Reference Work: A Textbook for Students of Library Work and Librarians,* American Library Association, Chicago, 1930, pp. 238–239.
6. Corinne Bacon, "Reference Work from the Librarian's Point of View," *Lib. J.,* **27,** 927–932 (November 1902).
7. Ref. 5, p. 97.
8. Frances Neel Cheney, *Fundamental Reference Sources,* American Library Association, Chicago, 1971, pp. 6–7.
9. Louis Shores, *Basic Reference Sources,* American Library Association, Chicago, 1954, pp. 2–3.
10. Ref. 9, pp. 18–19.
11. Louis Shores, *Library Education,* Libraries Unlimited, Littleton, Colo., 1972, pp. 11–14.
12. Ref. 9, p. 12.
13. William A. Katz, *Introduction to Reference Work,* Vol. 1: *Basic Information Sources,* McGraw-Hill, New York, 1974, pp. 25–26.
14. Ref. 9, pp. 23–24 (example eight is modified).
15. Mary Neill Barton, comp., *Reference Books: A Brief Guide for Students and Other Users of the Library,* 5th ed., Enoch Pratt Free Library, Baltimore, Md., 1962 (from an unnumbered group of illustrations following p. 68).
16. Eugene P. Sheehey, comp., *Guide to Reference Books,* 9th ed., American Library Association, Chicago, 1976, p. 97.

17. Robert Collison, *Encyclopedias: Their History Throughout the Ages*, Hafner, New York, 1966, p. 42.
18. Ref. *17*, p. 147.
19. Ref. *16*, p. 100.
20. "What in the World Is a . . . ? Understanding Micro, Macro, and Pro," *Know*, **11**, 3–4 (Spring/Summer 1974).
21. Ref. *16*, p. 100.
22. Ref. *3*, pp. 170–171.
23. Ref. *9*, pp. 98–99.
24. Ref. *9*, pp. 104–105.
25. Royal Society, Scientific Information Conference, 21 June–3 July, 1948, *Reports and Papers*, London, 1948, p. 557.
26. *The H. W. Wilson Company Indexes for Reference and Research*, Wilson, New York, n.d., p. 1.
27. Ref. *9*, p. 160.
28. Ref. *9*, p. 127.
29. Ref. *9*, p. 208.
30. Richard Krzys, "Reference Tools of the Future," *APLA Bull.*, **31**, 108–110 (December 1967).

BIBLIOGRAPHY

Cheney, Frances Neel, "Encyclopedias," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1972, Vol. 8, pp. 45–48.

Cheney, Frances Neel, *Fundamental Reference Sources*, American Library Association, Chicago, 1971.

Collison, Robert L., "Dictionaries: Dictionaries Before 1800," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1972, Vol. 7, pp. 170–191.

Collison, Robert, *Encyclopaedias: Their History Throughout the Ages*, Hafner, New York, 1966.

Coman, Edwin T., Jr., "Business Literature," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1970, Vol. 3, pp. 554–573.

Cook, Margaret G., *The New Library Key*, Wilson, New York, 1975.

Huff, William H., "Annuals," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1968, Vol. 1, pp. 434–447.

Humpal, Carolyn R., "Little Winchells: Guides to the Literature of Special Subject Fields," *Minnesota Lib.*, **21**, 110–116 (December 1964).

Hutchins, Margaret, *Introduction to Reference Work*, American Library Association, Chicago, 1944.

Immroth, John P., "Humanities and Its Literature," in *Encyclopedia of Library and Information Science* (A. Kent, H. Lancour, and J. E. Daily, eds.), Dekker, New York, 1974, Vol. 11, pp. 71–83.

Katz, William A., *Introduction to Reference Work*, McGraw-Hill, New York, 1969, 2 vols.

Kilgour, R. L., "Reference and Subscription Book Publishing," *Lib. Trends*, **7**, 139–152 (July 1958).

Krzys, Richard A., "Reference Books," in *The Encyclopedia of Education*, Macmillan, New York, 1971, Vol. 7, pp. 442–450.

Krzys, Richard A., "Reference Tools of the Future," *APLA Bull.*, 31, 108–110 (December 1967).

Library Journal, the April 15 issue of each year is devoted to a summary of the best reference works of the preceding 12 months.

Penland, Patrick R., *Advisory Counseling for Librarians*, Univ. of Pittsburgh, Pittsburgh, Pa., 1970.

Penland, Patrick R., "Communication Science," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1971, Vol. 5, pp. 421–465.

Penland, Patrick R., *Floating Librarians in the Community*, Univ. of Pittsburgh, Pittsburgh, Pa., 1970.

Penland, Patrick R., *Interviewing for Reference and Counselor Librarians*, Univ. of Pittsburgh, Pittsburgh, Pa., 1970.

Penland, Patrick R., *Leadership Development for Librarians*, Univ. of Pittsburgh, Pittsburgh, Pa., 1971.

Sheehy, Eugene P., *Guide to Reference Books*, 9th ed., American Library Association, Chicago, 1976.

Shores, Louis, *Audiovisual Librarianship: The Crusade for Media Unity (1946–1969)*, Libraries Unlimited, Littleton, Colo., 1973.

Shores, Louis, *Basic Reference Books: An Introduction to the Evaluation, Study, and Use of Reference Materials with Special Emphasis on Some 300 Titles*, American Library Association, Chicago, 1939.

Shores, Louis, *Basic Reference Sources*, American Library Association, Chicago, 1954.

Shores, Louis, *Library Education*, Libraries Unlimited, Littleton, Colo., 1972.

Shores, Louis, *Reference As the Promotion of Free Inquiry*, Libraries Unlimited, Littleton, Colo., 1976.

Stubbs, K. L., "Dictionaries: Dictionaries After 1800," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1972, Vol. 7, pp. 191–207.

Wyer, James I., *Reference Work: A Textbook for Students of Library Work and Librarians*, American Library Association, Chicago, 1930.

Ziskind, Sylvia, *Reference Readiness: A Manual for Librarians and Students*, Linnet Books, n.p., 1971.

LOUIS SHORES
RICHARD KRZYS

REFERENCE GUIDES

The publication of the ninth edition of the *Guide to Reference Books* was a milestone in American librarianship. It was published in October 1976 by the American Library Association (Chicago, Illinois)—a volume of more than a thousand pages, edited by Eugene P. Sheehy, head of the Reference Department, Columbia University Library. The *Guide* has had its reflections abroad in national and even regional guides to reference books and sources, ever since the American Library Association (then at Boston, Massachusetts) published a modest *Guide* of

slightly more than a hundred pages in 1902. That first volume was conceived and edited by Alice Bertha Kroeger, librarian of Drexel Institute (Philadelphia, Pa.) and director of its Library School, whose accomplishment has been much too little recognized.

According to a belated and little-known account of her, published in 1974 (*1*), Miss Kroeger was born May 2, 1864, at St. Louis, Missouri, and served on the staff of the St. Louis Public Library until she entered the New York State Library School, Albany, New York. She graduated with the class of 1891 and received an honor diploma. With the personal recommendation of Melvil Dewey she was appointed librarian of Drexel Institute, and she later organized its Library School. She died on October 31, 1909, having seen the second edition of the *Guide* in 1908.

Miss Kroeger's first edition was described in the preface as a guide designed primarily to help library assistants, library school students, college students, teachers, and users of libraries in general, who needed a knowledge of reference books quickly, in English mainly. It was based on a study of the reference departments of the principal libraries of Philadelphia, Boston, New York, St. Louis, and Washington, and it practically covered the course in reference books as pursued at Drexel Institute. The bibliographical details for the first edition of the *Guide* are:

Guide to the Study and Use of Reference Books: A Manual for Librarians, Teachers and Students, by Alice Bertha Kroeger, Librarian and Director of Library School, Drexel Institute, Philadelphia, Issued by the Publishing Board of the American Library Association, Houghton, Mifflin, Boston and New York; Riverside Press, Cambridge, 1902, viii, 104 pp. (ALA Annotated Lists).

Then, Isadore Gilbert Mudge (New York State Library School, B.L.S. with honors, 1900) became the reference librarian of Columbia University Library and enlisted the support of university president Nicholas Murray Butler in bringing the Reference Department to the top level in the country. She became the logical continuer of the work. In 1914 the supplement was published, as follows:

Guide to the Study and Use of Reference Books, by Alice Bertha Kroeger: *Supplement, 1911–13*, by Isadore Gilbert Mudge, Reference Librarian, Columbia University, American Library Association Publishing Board, Chicago, 1914, 48 pp.

The third edition appeared in 1917:

Guide to the Study and Use of Reference Books, by Alice Bertha Kroeger: *Revised Throughout and Much Enlarged*, by Isadore Gilbert Mudge, American Library Association, Chicago, 1917, xix, 235 pp. (also includes "A suggestive list of 100 reference books").

And in 1923 the fourth edition was published:

New Guide to Reference Books, by Isadore Gilbert Mudge, Reference Librarian, Columbia University: *Based on the Third Edition of the Guide to the Study and Use of Reference Books*, by Alice Bertha Kroeger, revised by I. G. Mudge, American Library Association, 1923, x, 278 pp.

As Waddell has so concisely and effectively expressed it:

> Mudge's professional concerns were not confined to the Columbia reference de-

> partment. . . . She was constantly concerned with the problems and tools of bibliographic control in the widest possible area . . . but herself preached the gospel of cooperative bibliographic activity at home and abroad, by tongue and by pen (*2*).

And when the School of Library Science was established at Columbia in 1926, she taught, until 1942, the course "Bibliography and Bibliographical Method," accompanying this work by the preparation of the fifth edition of the *Guide* in 1929, and by the sixth (504 pages, her last) in 1936. She retired in 1941 and died in May 1957.

In 1941 Constance M. Winchell succeeded Isadore Gilbert Mudge as Columbia's chief reference librarian, continuing in that position until 1962. She edited the seventh edition of the *Guide* in 1951, and the eighth in 1962.

In 1965 Eugene P. Sheehy became the head of the Columbia Reference Department, and after a series of periodical annual supplements, he edited the ninth edition of the *Guide* in 1976.

In 1974 the Library of Congress, Washington, D.C., which renders the national bibliographical service, made available in a limited edition the following volume, which was reproduced from typewritten copy:

Main Reading Room Reference Collection: Subject Catalog, Prepared Through MARC Development Office and General Reference and Bibliography Division Cooperation, Library of Congress, Washington, D.C., 1974, 544 pp.

Turning now to Great Britain, in 1929 the Library Association (London) published John Minto's *Reference Books: A Classified and Annotated Guide to the Principal Works of Reference* (vii, 356 pp.). Then, in 1948, the association published Arthur Denis Roberts's *Introduction to Reference Books*, with a second edition, revised, in 1951 (ix, 214 pp.). In 1959 Albert John Walford's *Guide to Reference Material* was published by the association. This one-volume work assumed an international scope; the second edition, three volumes, followed in 1966–1970; and it continued with the third edition, 1975–.

In 1969 James Childs wrote an article about the consequences for librarianship of these publications (*3*). The service rendered by the reference guides in the United States and Great Britain had been so great that regional and country guides to reference books and sources had begun to appear. This development made it necessary for the serious student and investigator to become aware of the increasing coverage; it also brought about the necessity of developing an alertness for countries or regions not covered or not too well covered, and it pointed to the need for extending such service wherever possible.

The existing guides (mainly centered on a country or area) are listed in the following sections: national guides and regional guides.

NATIONAL GUIDES

Argentina

The principal work has been done by Josefa Emilia Sabor, whose main work is:

Manual de fuentes de información: Obras de referencia, enciclopedias, diccionarias, bibliografías,

biografías, et., 2nd ed., enlarged, Editorial Kapelusz, Buenos Aires, 1967, xvii, 342 pp.; 1st ed., 1957 (Colección universitaria; Serie bibliotecología).

The second, produced with L. H. Revello, is:

Bibliografía básica de obras de referencia de artes y letras para la Argentina, Fondo Nacional de las Artes, Buenos Aires, 1968, 86 pp. (Bibliografía argentina de artes y letras, Compilacion especial, No. 36).

Australia

The able librarian of La Trobe University, Bundoora, Victoria, has produced three editions of the following:

Borchardt, Dietrich Hans, *Australian Bibliography: A Guide to Printed Sources of Information,* 3rd ed., Pergamon Press (Australia), Rushcutter's Bay, N.S.W., 1976, xiii, 270 pp.; 1st ed., Melbourne, 1963, 72 pp.; 2nd ed., Melbourne, 1966, 96 pp.

Belgium

Work on bringing together the information for a guide to Belgian reference books and sources has apparently begun, according to the two ministries of education and culture (Ministere de l'éducation nationale et de la culture francaise and Ministrie van nationale opvoeding en nederlandse cultuur).

Brazil

There is one guide that includes all Brazilian works and sources:

Camargo, Maria de Lourdes Sampaio Cintra de, *Guia de obrase de referencia brasileiras,* preliminary ed., Associdao Paulista de Bibliotecarios, Sao Paulo, 1967, ix, 69 leaves.

Another covers sources for Pernambuco State:

Fonseca, Edson Nery de, *Bibliografia de obras de referencia pernambucanas. Pref. de Orlando de Costa Ferreira,* Imprensa Universitaria, Recife, 1964, 80 pp.

Canada

The most recent, comprehensive guide is based on the collection of the National Library. There is a substantial supplement.

Ryder, Dorothy E., *Canadian Reference Sources: A Selective Guide,* Canadian Library Association, Ottawa, 1973, 185 pp.; and *Supplement,* 1975, xi, 121 pp.

A previous guide had been prepared by the chief librarian of the Toronto Public Libraries:

Campbell, Henry Cummings, *How to Find Out About Canada,* Pergamon Press, Oxford, London, New York, 1967, xiv, 248 pp. (The Commonwealth and International Library, Libraries and Technical Information Division); presented in narrative form.

An unpublished list of basic Canadian reference works, compiled at the School of Librarianship, University of British Columbia, Vancouver, has been mentioned.

For Québec Province, a reference guide has been compiled at and published by the Bibliothèque Nationale du Québec, which was established at Montreal on January 1, 1968. It was prepared by Réal Boal, assisted by G. A. Chartrand and J. Sansfacon. It contains 609 titles, mainly annotated, grouped in a general classification according to the Dewey Decimal Classification, and it has had one substantial supplement:

Boal, Réal, *Les ouvrages de réference du Québec: Bibliographie analytique,* Ministère des Affaires Culturelles, Bibliothèque Nationale du Québec, Québec, 1969, xiii, 189 pp. (can be purchased from the Éditeur officiel du Québec, Hotel du Gouvernement, Québec).

China

A guide was prepared at the Hoover Institution, Stanford University, Stanford, California, for the Joint Committee on Contemporary China of the American Council of Learned Societies and the Social Science Research Council. Emphasis is on the humanities and the social sciences, limited to post-1949 mainland China and post-1945 Taiwan, and it includes both mainland China and Taiwan materials as well as those in English, Japanese, and Russian:

Berton, Peter Alexander Menquez, and Eugene Wu, *Contemporary China: A Research Guide,* edited by Howard Koch, Jr., Hoover Institution on War, Revolution and Peace, Stanford, Calif., 1967, xxix, 695 pp. (Bibliographical Series, No. 31).

In 1971 another guide relating to China appeared in a third edition:

Teng, Sau-yü, and Knight Briggerstaff, *An Annotated Bibliography of Chinese Reference Works,* 3rd ed., Harvard Univ. Press, Cambridge, Mass., 1971, xi, 250 pp.

Colombia

The late director of the Escuela Interamericana de Bibliotecología, Medellín, Colombia, issued in mimeographed form the second edition of a guide in 1968. It contained 1,188 works, mostly published since 1900 (more than twice the number in his edition of 1960), and this has been supplemented through 1972:

Floren Lozano, Luis, *Obras de referencia y generales de de la bibliografico colombiana,* Escuela Interamericana de Bibliotecologia, Medellín, 1968, [9], 204, 22 leaves (Serie bibliografias, No. 28).

Denmark

A guide has been prepared by a member of the staff of the State Library School, Copenhagen:

Andersen, Axel, *Handbøgerees hvor-stor-det [Red: Knud Sandvej],* Politiken, Copenhagen, 1969, 496 pp. (Politikens litteratur handbøger).

Dominican Republic

The director of the Interamerican Library School, Medellín, Colombia, prepared a brief guide during his previous tenure in a library position in the Dominican Republic:

Floren Lozano, Luis, "Bibliografia dominicana: Obras de referencia," in *Anales,* Universidad de Santo Domingo, Ciudad Trujillo, Vol. 19, No. 69–70, January–June, 1954, xv pp. and suppl.; contains 89 titles.

Finland

There are two editions of a Finnish guide:

Grönroos, Henrik, *Suomen bibliografisen kirjallisuuden opas; Guide des bibliographies finlandaises,* in Finnish, Swedish, and French, Helsinki, 1965, 219 pp. (Tietolipas, No. 42).

Grönroos, Henrik, *Finlands bibliografiska litteratur,* Ekenäs, 1975, 388 pp.; in Swedish, with a one-page summary.

France

Malcles, Louise Noëlle, *Les sources du travail bibliographique,* E. Droz, Geneva; Giard, Lille, 1950–1958, 3 vols. in 4.

German Democratic Republic

Only a rather modest work exists, and that is not too recent:

Boden, Hans, *Verzeichnis bibliographischer Nachschlagewerke für allgemeine öffentliche Bibliotheken: Eine Bibliographie der Bibliographien,* Zentralinstitut für Bibliothekswesen, Berlin, 1957, 51, 19 pp.

German Federal Republic

The main reference guide was published in its fourth edition in 1972, the first having been issued in 1953:

Totok, Wilhelm, Karl Heinz Weimann, and Rolf Weitzel, *Totok–Weitzel: Handbuch der bibliographischen Nachschlagewerke*, 4th ed., expanded and completely revised, Vittorio Klostermann, Frankfurt am Main, 1972, xxxiv, 367 pp.

Hong Kong

Even for this small but busy center, there is a guide:

Berkowitz, Morris I., *Hongkong Studies: A Bibliography*, compiled by M. I. Berkowitz and Eddie K. K. Poon, 1st ed., Dept. of Extramural Studies, Chinese University of Hong Kong, Hong Kong, 1969, xvi, 137 pp.

Hungary

Of the two cited, the first was issued in 1967; the second was published in 1963, but does not extend beyond 1960.

Köhalmi, Bëla, *A tudományos tájékoztatás fejlödése hazánkban, 1945–1965*, OKDT, Budapest, 1967, 574 pp.

Szentmihályi, János, and Miklós Vértesy, *Utmutató a tudományos munka magyar és nemzetkozi irodalmához* [A Guide to Hungarian and Foreign Reference Books], in Hungarian, English, and French, Gondolat, Budapest, 1963, 730 pp.

India

Of the four titles cited, all were issued in the 1970s, and one is in one of the languages of India:

Chatterjee, Amitabha, *Indian Reference Publications: A Bibliography*, compiled and edited by Amitabha Chatterjee and Nemi Ghose, Foreword by Subodh Mookerpee, 1st ed., Mukherji Book House, Calcutta, 1974, viii, 119 pp. (Indian Reference Series, No. 2).

Gidwani, N. N., and K. Navalani, *A Guide to Reference Materials on India*, compiled by N. N. Gidwani and K. Navalani, Saraswati Publications, Jaipur, Rajasthan, 1974, 2 vols.

Mukherjee, A. K., *Reference Work and Its Tools*, 2nd ed., revised and rewritten by A. K. Mukherjee, World Press, Calcutta, 1971; 1st ed., 1964, 335 pp.

Venkatappaiah, Velaga, *Samachara viganam* [Information Science], Sanchalana Sahiti, Eluru, 1972, 168 pp. The second part includes a classified list of more than 300 titles in Telugu.

Israel

The only title cited is from the Graduate Library School of the Hebrew University:

Lewy, K., *Madrikh lebibliyyografiot kelaliyyot ulsifre ezer*, Hebrew University, Graduate Library School, Jerusalem, 1967, 155 pp. (Publications, No. 3).

Jamaica

Institute of Jamaica, *A Guide to Jamaican Reference Material in the West India Reference Library*, by Rae Delattre, Institute of Jamaica, Kingston, 1965, 76 pp.

Japan

Kokusai Bunka Shinkokai (K.B.S.), *Bibliography of Standard Reference Books for Japanese Studies, with Descriptive Notes*, Tokyo, 1959–1971, 11 vols. in 13.

Nihon no Sanko Toshū Henshu Iinkai [Nihon no sanko tosho, Eng.], *Guide to Japanese Reference Books*, American Library Association, Chicago, 1966, 303 pp. Based on the revised Japanese edition.

Korea

The only title cited is a manuscript by the person in charge of the Korean Collection, Library of Congress:

Yang, Key Paik, "Reference Guide to Korean Materials, 1945–1959," Washington, D.C., 1960, viii, 131 leaves, typescript; thesis (M.S. Lib. Sci.), Catholic University of America.

Malaysia

Late in 1976 the National Library of Malaysia (Perpustakaan Negara Malaysia), Kuala Lumpur, reported that while there was no real guide to reference books and sources available as yet, it was in the process of preparing a bibliography of reference books and sources.

New Zealand

Harris, William John, *Guide to New Zealand Reference Material and Other Sources,* 2nd ed., New Zealand Library Association, Wellington, 1950, xiii, 114 pp.; Suppl. No. 1–2, June 1951–August 1956, compiled by A. G. Bagnall.

Norway

The guide cited is the third edition, issued by the Statens Bibliotekskole. As the author is deceased, there has been no subsequent edition.

Nitter, Christian U., "Håndböker og annen literatur for lesessalsarbeidet: Et udvalg.," 3rd ed., Statens Bibliotekskole, Oslo, 1961, [4], 224 leaves, mimeographed; and "Forfatter-og titel-register," 1961, 39 leaves, mimeographed.

Pakistan

Siddiqui, Akhbar H., *A Guide to Reference Books Published in Pakistan,* Pakistan Reference Publications, Karachi, 1966, 41 pp.

Includes 473 unannotated titles published in English in Pakistan, August 1947–December 1965.

Supplemented for bibliographies by Siddiqui's

Reference Sources on Pakistan, National Book Center of Pakistan, Karachi, 1968, 32 pp.

Philippines

Dr. Ursula Picache, director, Institute of Library Science, University of the Philippines, Diliman, Quezon City, has reported that work is underway on a guide to reference books and sources.

South Africa

Musiker, Reuben, *Guide to South African Reference Books,* 5th ed., rev., A. A. Balkema, Cape Town and Amsterdam, 1971, viii, 136 pp.; Supplement, 1972–.

Sri Lanka (Ceylon)

Goonetileke, Henry Alfred Ian, *A Bibliography of Ceylon: A Systematic Guide on the Land, People, History and Culture Published in Western Languages from the Sixteenth Century to the Present Day,* Foreword by J. D. Pearson, Inter Documentation, Zug, Switzerland, 1970, 2 vols., lxxx, 865 pp. (Bibliotheca Asiatica, No. 5); Reference Books: Vol. 1, pp. 10–53.

Sweden

Berggren, Gösta, *Uppslagsböcker: Ett kominenterat urval för bibliotek och gymnasier; folkbiblioteket och dess lantagare,* Bibliotekstjänst, Lund, 1969, 110 pp. (Bibliotekstjänst [Btj] series, No. 23).

Contains about 500 in-print titles with prices and has some annotations; arranged by the Swedish Library Association classification. Replaces "Bokurval no. 50" (1964), by Rune Arnling and Kjell Petterson, which was a basic, unannotated list of about 250 current Swedish reference books appearing under the title "Uppslagsböcker, ett standardurval" (27 pp.).

Lindberg, Sten Gabriel, *Swedish Books, 1280–1967*, Stockholm, 1968, 111, xxxi pp. (Kungliga Bibliotekets utställningskatalog, No. 51).

"A select guide to reference literature on Sweden" appears on pp. 65–111.

Turkey

Thompson, Lawrence Sydney, "Basic Turkish Reference Books," Ankara, 1952, 11 pp., mimeographed.

Reference is made to a proposed guide; this has never been realized, although the spirit of interest at present seems to be increasing.

U.S.S.R.

Maichel, Karol, *Guide to Russian Reference Books*, Hoover Institution on War, Revolution and Peace, Stanford, Calif., Vols. 1–3, 1962–1967 (Hoover Institution, Bibliographical series, Nos. 10, 18, 32).

REGIONAL GUIDES

Africa, Sub-Sahara

Duignan, Peter, *Guide to Research and Reference Works on Sub-Saharan Africa*, edited by Peter Duignan, compiled by Helen F. Conover and Peter Duignan with the assistance of Evelyn Boyce, Liselotte Hofmann, and Karen Fung, Hoover Institution Press, Stanford, Calif., 1971 [1972?], xiii, 1102 pp. (Hoover Institution Bibliographical series, No. 46).

Arab Countries

'Abd al-Rahman, 'Abd al-Jabbēr, *Guide to Arabic Reference Books: An Annotated Bibliography of Books in Arabic and in Western Languages Dealing with the Arabs*, The University Basra, 1970, 12, 556, 5 pp.; title also in Arabic.

Al-Hajrasi, Sa'd Muhammad, *Bibliographical Guide to Reference Works in the Arab World; Guide bibliographique des ouvrages de réference dans le monde arabe*, Commision national de UNESCO, United Arab Republic, Cairo, 1965, xxiv, 130 pp. Also issued in Arabic.

Asia

Garde, Purushottam Krishna, *Directory of Reference Works Published in Asia; Répertoire des ouvrages de reference publié en Asie*, UNESCO, Paris, 1956, xxvii, 139 pp. (UNESCO Bibliographical Handbooks, No. 5).

Included are: Afghanistan, Burma, Cambodia, Ceylon, China, Hong Kong, India, Indonesia, Japan, Laos, Malaya, Pakistan, Philippines, Singapore, Thailand, and Viet Nam. Arranged by UDC. Not annotated.

Johnson, Clay, *Guide to Reference Materials on Southeast Asia, Based on Collections in Yale and Cornell*, Yale Univ. Press, New Haven, Conn., 1970, 160 pp. (Yale Southeast Asia Studies, No. 6).

Nunn, Godfrey Raymond, *Asia: A Selected and Annotated Guide to Reference Works*, M.I.T. Press, Cambridge, Mass., 1971, xiii, 223 pp.

Latin America

Geoghegan, Abel Rodolfo, *Obras de referencia de America Latina: Repertoiie selective y anotado de encyclopedias, diccionarios, bibliografias; repertorios biograficos, catálogos, guías,*

anuarios, indices, etc., published with the assistance of UNESCO, Buenos Aires, 1965, xxiii, 280 pp.

Contains 2,693 entries for sources published before December 31, 1963. Annotated and arranged according to UDC.

In conclusion, this very considerable enumeration of reference guides (beginning with the modest work of Alice B. Kroeger in Philadelphia, Pa., early in the 20th century, with the publishing support of the American Library Association) indicates how great the advancement has been in this vital aspect of the development of library service. The importance of these guides is especially apparent when we realize that we face an ever increasing flood of materials being published with ever widening specialization in all the languages of the world. Having long been confronted with this problem in more than one difficult field, this author could keep abreast of the situation, as best could be, by maintaining contacts in the library field the world over. It is to be hoped that the existing reference guides can be continually revised to keep abreast of the developments, and that new guides, wherever necessary and possible, will be brought together and published.

REFERENCES

1. Doris Mariani, "Some Reminiscences of Alice B. Kroeger," Drexel University, Graduate School of Library Science, *Newsletter*, No. 6, Spring 1974.
2. John Neal Waddell, "Mudge, Isadore Gilbert," in *Encyclopedia of Library and Information Science* (A. Kent, H. Lancour, and J. E. Daily, eds.), Dekker, New York, 1976, Vol. 18, pp. 287–291.
3. James Bennett Childs, "Regional and Country Guides to Reference Books," *RQ*, 9(2), 137–141 (Winter 1969).

JAMES BENNETT CHILDS

REFERENCE SERVICES AND LIBRARIES

Reference service in libraries is most often defined as direct, personal assistance to readers seeking information. If the three common functions of libraries are the acquisition, organization, and dissemination of information, then reference service is directed primarily toward the last of these, the dissemination function. The character of reference service differs markedly among libraries, both individualy and in terms of type and size. It may range from a minimal level of aid to users in locating their own information, on the one hand, to the actual delivery of information to clients, on the other. Both philosophically and in practice, libraries and librarians at present reflect wide variations in the extent and character of the assistance they render to those in search of information.

Early Development

"The beginnings of reference service," wrote Samuel Rothstein, "are lost in antiquity" (*1*). While it is true that informal help to individual readers in the use

of collections was provided as a courtesy by librarians from the beginnings of organized libraries, the origins of formalized reference service are found in American academic and public libraries and date from the last quarter of the 19th century. Organized reference service appears to have been a uniquely American contribution to world librarianship. Thus, it is not inappropriate to examine its development in terms of the American library setting.

The inauguration of formalized reference service in libraries seems clearly to be related to certain economic and social developments in the larger context of 19th-century American society. Chief among these are the transition from a rural, agricultural to an urban, industrial economy; the acculturation of a large immigrant population; the rise of public education; and the changing character of the American college and university. As the public library movement swept the United States in the last decades of the 19th century, college and university libraries were also changing radically in character as a consequence of a growing orientation toward graduate study and research. The latter is commonly related to the founding of Johns Hopkins University (Baltimore, Maryland, 1876), the first American institution of higher education to be modeled on the German university rather than on the English college.

The newly established public libraries of the late 19th century were dedicated more to the *use* of books than to their preservation, and they had been created to serve the entire community, rather than merely an economic, social, or intellectual elite. Consequently, those who staffed them were compelled to abandon the "custodial" approach to librarianship that had been characteristic in libraries up to that time. Almost simultaneously, American college and university libraries were undergoing very significant changes in size and character by virtue of both a growing emphasis on research and the widespread adoption of less restrictive approaches to instruction. Thus, the American public library in the last quarter of the 19th century faced a mandate to serve broad segments of society that had not, in the past, enjoyed free or easy access to books; while the American college and university library, as a consequence of changing patterns in higher education, was obligated to respond to growing and changing demands for access to its expanding collections.

By 1876 both public and academic libraries were experiencing rapid, dramatic growth in the size of their collections, a phenomenon that has continued to the present time. Along with the emphasis on the acquisitions function—and, indeed, as a consequence of it—came the need for greater attention to the organization of collections for access and use. The results of this growing concern were exemplified in the rise of the dictionary catalog, which made systematic provision for a subject approach to library holdings; in the widespread adoption of Melvil Dewey's scheme for the subject classification of books; and in the publication, in 1882, of W. F. Poole's pioneering index to general periodicals.

While some librarians persisted (even well into the present century) in the belief that catalogs, classification systems, and indexes were, or ought to be, sufficient to provide adequate access to collections for readers, others recognized that the responsibility of the library must extend beyond the mere gathering and organizing of books and journals, to an active role in the dissemination of information. In 1876, at the first conference of the American Library Association, Samuel S.

Green (librarian of the Worcester, Massachusetts, Free Public Library) presented a paper titled "Personal Relations Between Librarians and Readers," generally recognized as the earliest proposal for the establishment of formalized reference service in libraries. In the same year, A. R. Spofford (then librarian of Congress) and Justin Winsor (then superintendent of the Boston Public Library and later librarian of Harvard University) contributed chapters on reference books to the U.S. Bureau of Education's landmark survey volume, *Public Libraries in the United States of America.*

The last decades of the 19th century and the early years of the 20th saw the gradual acceptance and implementation of the concept of the reference function of the library. Along with Samuel Green, the leading advocates at that time were Poole, Winsor, and Melvil Dewey, among others. Kaplan wrote that "by 1893, the theory of reference service [had] been thoroughly and generally accepted by American librarians," citing as evidence the designation of one or more library staff members to fill the reference function, the creation of reference rooms, the establishment of distinct reference collections, the general adoption of the dictionary card catalog, and the subject classification of library holdings (*2*). In 1883 the first full-time reference position was established, at the Boston Public Library, and in 1891 the term "reference work" appeared for the first time in the index to *Library Journal.*

Reference Service: The Underlying Rationale

Four major elements emerged as a rationale and justification for this newest expansion in library services, which added the responsibility for assistance and access to the traditional functions of the librarian as assembler, organizer, and custodian of collections of books and journals. The first, significant for both the academic and the public librarian, was the obvious need to instruct students in the use of library collections. Indeed, Rothstein has written that "interpreting the catalog and assisting undergraduate students were the chief responsibilities of the reference worker in the American college of the 1890's" (*3*).

Closely related to the concept of assistance to students was the emerging notion of the role of the library as a potentially active (rather than merely a passive and responsive) participant in the educational process. This second principle, the image of the public library as an educational institution, a "people's university," has been central to the philosophy of public library service in the United States from the outset. Thus, it was natural for public librarians to rather readily accept the obligation of providing reference assistance, particularly to those who were less knowledgeable in the use of books and libraries. This thread can be traced through the development of readers' advisory services in public libraries during the early decades of the 20th century, down to the concept of the public library as a community information center that underlies the establishment of information and referral services in the 1970s. A parallel development—initially in libraries associated with institutions of higher education, and more recently at the elementary and secondary levels—has

been the idea of the teaching function of the library, which implies the creation of an active, augmented form of reference service. The contemporary concept of the "library-college" illustrates the persistence of this theme down to the present.

The two remaining basic principles that constitute the foundation of, and rationale for, the development of reference service are of particular significance for the public library. The first, which derives from the perception of the public library as an instrumentality of public education, is the belief that one of its major objectives ought to be to elevate the level of popular reading taste. Thus, the reference function, in one of its key aspects, was initially conceived as that of guiding the untutored, unsophisticated neophyte in the world of books to the "best" reading on a given topic. This concept is also closely linked to the 20th-century role of the reference librarian as reader's adviser, and finds contemporary expression in those aspects of reference service that center on assisting the reader to select, or selecting for the reader, from the total body of available information on the given topic.

Fourth, and finally, the motivation for inaugurating reference service in the public library was heavily based in the perceived necessity for that institution to justify its existence and its claim on the public treasury in the eyes of those whose gifts or taxes provided the basis for its financial support. The public library, from its beginnings, needed to provide evidence to the community at large that it performed a useful service. The reference function was, from the outset, considered central in this respect. Samuel Green, for example, in his initial statement seeking to establish a rationale for the addition of reference assistance to the existing services of the library, wrote:

> One of the best means of making a library *popular* is to mingle freely with its users, and help them in every way. When this policy is pursued for a series of years in any town, a very large portion of the citizens receive answers to questions, and the conviction spreads through the community that the library is an institution of such beneficent influences that it cannot be dispensed with (*4*).

These four objectives, then—to assist students, to develop the role of the library as an educational institution, to help readers make the best selections from the universe of recorded information, and to justify the existence of the library by demonstrating its value to those who support it—appear to constitute both the underlying rationale for reference service and the principal conceptual basis for its development up to our own time.

The 20th Century—The Growth of Reference Service

The period since 1900 has witnessed both the consolidation of the original concept of reference service and its expansion in response to new social, economic, and educational imperatives. Major developments in the larger social environment that have been of particular significance for the expansion and growth of reference service have included the continued progress of the United States and other nations of the world toward industrialization; the dominance of science and technology in

the present century; the expansion of the formal educational establishment; the increasing importance of research in its governmental, industrial, and societal aspects; and the exponential growth in the body of recorded knowledge. Among the important changes in the character of libraries that have influenced the nature of reference service are the trend toward subject departmentalization of libraries and subject specialization by librarians, the special library movement, the emergence of the newer media for the storage and communication of information, the improvement of the mechanisms of bibliographical control, and the adaptation of the computer and related electronic technologies to the organization, storage, and dissemination of information.

The early 20th-century pattern in larger libraries of establishing reference departments characterized by separate physical facilities, a distinct reference collection, and a designated reference staff has already been noted. As both public and academic libraries grew in size, subdivision of staff, facilities, and collections by function and/or by client group served (e.g., children, undergraduates, etc.) became commonplace. Further subdivision by form or type of materials was often superimposed upon this basic organizational pattern. Thus, larger libraries, relatively early in the current century, created special departments and staffs for rare books, manuscripts, government publications, periodicals, and, more recently, for nonprint materials such as maps, microforms, recordings, and films. Those who staffed these departments, by virtue of their greater familiarity with the specialized materials housed there, were capable of offering more extensive and sophisticated assistance to library users.

Of even greater significance for the development of reference service in general libraries, however, has been the 20th-century phenomenon of the organization of large, and even medium-sized, public and academic libraries into subject divisions or departments. In the public library, materials relating to business, industry, science, and technology, or those for music and art, were often among the first to be separately housed and staffed, but as early as 1913 the Cleveland Public Library adopted a plan of full subject departmentalization. A parallel development occurred in some academic libraries, taking the form of both the selective creation of subject department libraries (often at locations remote from the central library facility) and of the adoption of the subject-divisional approach to the organization of the total library collection and staff. This was popularized originally by Ralph Ellsworth in the 1930s at the University of Colorado, and was subsequently most fully exemplified at the University of Nebraska under Frank Lundy. While subject departmentalization did not wholly eliminate the need for a general reference unit, it did tend to shift the locus of in-depth reference and research assistance to the subject units, while the general reference staff became more concerned with directing inquiries to the appropriate subject departments or handling simple, factual, "ready reference" informational needs. The ready reference function had already become commonplace in general public libraries—and to a lesser extent, in academic libraries—as an early addition to simple assistance to readers in the location of books and the use of the catalog.

The most important consequence of the movement toward subject departmental-

ization in larger libraries was that it created an environment receptive to the development of subject specializations by the library staff. Subject specialist librarians, frequently with advanced academic credentials in appropriate disciplines, were increasingly sought and engaged to staff the newly created subject departments. The responsibilities of the subject specialist commonly encompassed both the selection and acquisition of books and journals for the departmental collection, and the provision of reference and advisory services to the library's clientele. In the public library—and, more notably, in the university library—this resulted in a staff better equipped to provide meaningful reference assistance in considerably greater depth, not only to the student or other beginner in the discipline, but to the more sophisticated user as well. In the academic library, the advent of subject specialist staff members contributed significantly to the expansion of the reference clientele to include both graduate students and faculty members engaged in advanced research. The growth of the book, journal, and other literature in all disciplines has served, particularly in the last 30 years, to make these more sophisticated users of library reference services increasingly dependent on those librarians who combine knowledge of a subject field with close and extensive familiarity with the current literature of that discipline.

The Special Library Movement

Perhaps no single development in libraries has contributed more to the growth of the concept of reference service in our own time than has the special library movement. Its origins can be traced to the establishment of the Special Libraries Association in the United States in 1909, and even earlier, to the founding of legislative reference libraries. Most notable was the Legislative Reference Department of the State of Wisconsin, which (almost from its creation in 1900 under Charles McCarthy) became the model for other states, for municipal reference libraries, and, ultimately, for the Legislative Reference Service at the Library of Congress (established in 1914). As Rothstein has written:

> The first well-known application of special librarianship was in the field of legislative reference work. There is little doubt that the legislative reference librarians were the most influential in the launching of the special library movement and did the most to establish its basic character (*5*).

Unlike other types of libraries, the special library centered its activities not on the expansion of its collections, but on service to its clientele. In the context of the special library, reference service broadened in scope from mere assistance in the location of books and journals and the provision of simple factual information from a limited collection of reference books, to include the location, analysis, interpretation, evaluation, and reformatting and reorganization of information drawn from a variety of sources in order to present it in the form in which it would be most immediately useful to the client. Individual special libraries varied considerably in the extent to which they provided these new, "amplified" reference services,

but for many, as Rothstein suggested, "the literature survey probably ranked as the most important single feature" (*6*). This service included not only an exhaustive bibliographic search to identify all relevant published information on a topic, but frequently involved selection, evaluation, and abstracting of the most useful portion of the total literature. A key distinction, in contrast to the preparation of bibliographies by reference staff in other types of libraries, lay in the extent to which the special librarian assumed responsibility for the delivery of *information* to clients (rather than the mere identification and location of books and journals) and the concomitant assumption of personal responsibility by the special librarian for the accuracy of the information provided.

From its origins as the legislative reference library, the special library expanded into such environments as industrial research laboratories, other areas of business and industry, and governmental and health care agencies. The 20th century has been characterized by the growth of special libraries, the development of a class of subject specialists to staff them, and a resulting enlarged concept of reference service to the groups that form the special library's clientele. This has been facilitated, both for the special librarian and for his or her counterparts in reference service in other types of libraries, by the creation of an extensive array of tools and devices to assist in the bibliographic control and subject analysis of knowledge records in the wide variety of formats that are characteristic of the present age. Notable examples include current, complete national bibliographies; the published retrospective and current catalogs of monographic holdings of great national libraries such as the Library of Congress and the British Museum; the *National Union Catalog*, which provides access, initially in printed form and more recently in machine-readable format, to the holdings of several hundred major North American libraries; the *Union List of Serials* and *New Serial Titles*; batteries of specialized indexes to periodicals and technical reports; centralized indexing and abstracting services; and, since the end of World War II, the extensive application of the computer and its associated electronic technologies to the bibliographic control of knowledge records and the mechanized storage and retrieval of information. The advent of on-line bibliographic and data information systems—as exemplified by the Ohio College Libraries Center and the MEDLARS/MEDLINE system for the bibliographic control of medical literature in all forms—is a contemporary illustration of the most recent developments in the application of the computer to the problems of bibliographic information storage and retrieval. The availability of this vastly expanded and improved array of resources has made it possible for the reference librarian to both achieve effective control over a growing body of world literature in all disciplines and to provide, in some instances, reference service in considerable depth to specialized clienteles.

Three Approaches to Reference Service

As the foregoing summary indicates, reference and information services have become, since 1876, a well-established part of the program of libraries of all types.

In some instances—as a consequence of the utilization of subject specialist staff, the development of improved tools and techniques for bibliographic control and enhanced access to recorded information, and the growing informational needs of technical and research clienteles—reference service has developed in scope far beyond the minimal level of "assistance to readers." As noted in the opening paragraph of this article, however, the extent and character of available reference service varies markedly at present both among individual libraries and among different types and sizes of libraries.

Writing in 1930, James Ingersoll Wyer, seeking to elucidate a "theory of reference work," reported the existence of "three distinct conceptions of it." Thirty years later, in what has become a classic paper, Samuel Rothstein suggested that reference service as practiced in contemporary libraries continued to reflect Wyer's three distinct conceptions, which the earlier author had characterized as "conservative," "moderate," and "liberal," and which Rothstein termed "minimum," "middling," and "maximum" (7). In 1977 this taxonomy remains apt in describing reference and information services as they exist across the range of libraries in the United States.

The conservative, or minimum, approach is still characteristic of reference service in a significant number of general public, academic, and school libraries. The librarian limits his or her role to that of serving as a guide to the client's use of books, journals, and other resources. The emphasis is on helping the user to help himself, on instruction in how to use books and libraries rather than on delivery of information. The goal appears to be to make the user ultimately self-sufficient. The reference librarian does not undertake to choose materials for the user, nor to assume responsibility for the adequacy or accuracy of the information found in those sources the user is able, with assistance, to locate. Commonly, however, exceptions are made to the extent of providing brief, factual information of the "ready reference" variety, such as dates of birth or death, addresses, biographical data for those included in standard reference sources, and bibliographical citations. Information is more likely to be provided when the inquiry is received by letter or telephone, while the inquirer who presents himself at the library in person is more often, particularly if not an adult, encouraged to locate needed materials on his own, with the librarian's guidance.

The stress, under the conservative theory, is on education or instruction of the user, on the teaching function of the library. In the case of the public library, the rationale for this view is found in the 19th-century concept of that institution as the "people's university," a resource provided by the community for the self-education of the citizenry. It is a simple extension of this view to support the notion that the first obligation of the citizen in pursuing his self-education is to train himself, with the assistance of the reference librarian, in the techniques of using books and libraries and in the methods and tools for the location of information. For many librarians the issue has been an ethical and moral one, particularly with respect to the young, where "doing one's own work" is viewed as an essential aspect of the educational process. Beyond this, there is the real question of the competence of the librarian, particularly in the general reference setting, to undertake the analysis,

interpretation, or evaluation of information in even a single area of knowledge, let alone across the range of subject disciplines. Finally, the conservative approach to reference service finds support in what may be termed the "egalitarian argument." The general public, academic, or school library, serving a large and heterogeneous clientele, perceives itself as lacking sufficient resources to provide information service in depth to all or even to a majority of its users. Many hold that the library ought not to provide any service to one user that it is unprepared to offer on an equal basis to all users, actual or potential. The consequence of this view is to offer relatively minimal service to the largest possible number of users, and to emphasize instruction rather than the delivery of information.

Advocates of the conservative approach have included such distinguished librarians as John Cotton Dana, William Warner Bishop, and Ainsworth Rand Spofford. The latter wrote in 1900: "It is enough for the librarian to act as an intelligent guidepost" (*8*). Summarizing the views of the conservative school, Wyer has written:

> Those who hold with Dana and Bishop believe that the prime duty of a library is not to find answers but to organize its material effectively and teach patrons to help themselves. The librarians should keep the books on the shelves when not in use, prepare accurate catalogs and files, segregate special collections as needed, keep accurate loan records, and in addition be on hand to direct, suggest, explain, help a little, answer questions as to the use of the library's machinery, know as many as possible of the books the library owns and a good deal about some of them, but be scrupulous always to stop short of finding anything or even looking for anything in any book (*9*).

The liberal, or maximum, approach to reference service contrasts sharply with the conservative view. Rothstein suggested that it comprises three distinctive elements: an emphasis on the delivery of information, rather than necessarily of books or journals, to users; "the concept of a library assistance that would be 'expert,' a service that could guarantee the authenticity and relevance of any information it supplied because it was founded on the firm and impeccable scholarship of the library staff"; and the notion of differentiated service, with conscious, overt distinctions made in the kind and amount of assistance to be provided both to different categories of users and to different individuals within those categories (*10*). The liberal philosophy of service explicitly subordinates the instructional function (as it relates to mastery of the techniques of library use and manipulation by the clientele of reference tools and sources) to a responsibility for the delivery of information to clients in a form that permits them to make immediate use of it.

Given the growth in size and complexity of the body of recorded knowledge, the liberal approach maintains that it is at once unrealistic, uneconomical, and inefficient for the user to attempt to master the specialized skills and knowledge that are the special province of the librarian. Rothstein, in perhaps the most eloquent argument yet advanced for adoption of the liberal position in the provision of reference and information services, wrote:

> The chemist no longer blows his own glassware and the doctor no longer takes his own temperatures: why should they not have the librarian conduct literature

> searches for them? And where efficiency suggests the librarians should, faith says the librarian can do these things, and perhaps even better than the client himself. Given the requisite subject knowledge and sound bibliographical training, the librarian can, in this view, become a specialist in "finding out," even to the point of validating the data he secures (*11*).

The liberal, maximum approach is (as has been suggested earlier) particularly characteristic of those special libraries that exist in the context of profit-making organizations and/or serve limited, specialized executive or research clienteles. Emphasizing the distinction in the special library between document delivery and information delivery, and the overriding importance of the latter, Mary Edna Anders has written, "the special librarian deals in information not in bibliographical units" (*12*). More recently, however, the liberal approach has begun to find significant support among academic librarians, notably in services to faculty and graduate students engaged in sponsored research activities; in specialized information centers and information brokerage agencies that have developed outside of the traditional context of libraries; in public libraries, both in the context of specialized information units devoted to the needs of business and industry and in information and referral centers dedicated to meeting the informational needs of the disadvantaged; and even in some school libraries which have followed the direction identified by Leonard H. Freiser, formerly chief librarian of the Toronto (Canada) Board of Education, who, as early as 1963, proposed "a program of information retrieval for students—literally placing into the student's hand articles, books and sources from all media in response to his request for specific information" (*13*).

At present, an intermediate position—one between the extremes of conservative and liberal philosophies of reference service described in the preceding paragraphs—seems most common in a majority of general libraries. Despite improvements in bibliographical tools and the availability of the computer as an information storage and retrieval device of extraordinary power, general libraries have not, for the most part, moved toward widespread adoption of the liberal theory or widespread application of it in the form of maximum reference/information service. Summarizing the current situation, Galvin has written:

> In the three decades since 1945, libraries and librarians have struggled to accommodate and cope with exponential growth in the volume of knowledge records. There has also occurred in that period a very significant growth and improvement in the whole apparatus of bibliographical control, both through expansion and strengthening of the range of such traditional resources as national and trade bibliographies, journal indexes, abstracting services, and the like, as well as the coming into existence of a whole new group of both conventional and nonconventional aids to the storage, analysis and retrieval of recorded information. In particular, the advent of the computer, and its adaptation to information storage and processing, have placed at the disposal of librarians an armamentarium of bibliographical and informational aids, some of which were hardly dreamed of a quarter century ago. Can we point to a corresponding general improvement in the quality of normal reference and information services that libraries render to their clienteles? In the case of certain relatively small, discrete, homogeneous, specialized, client groups, there has been dramatic improvement in the amount and quality of information service provided. This came partly as a consequence of the avail-

> ability of new technology and partly because an urgent, demonstrable need for improved access to knowledge records has been coupled with the financial resources needed to support it. But for the large, general, heterogeneous client groups served by public, academic and school libraries (and by a good many special libraries as well), it would be difficult to demonstrate that there has been a general upgrading of reference or information service at all commensurate with the improved technology available to us. While we could probably list a number of individual institutions and agencies that might qualify as exceptions, I am still convinced that for most actual or potential clients of most general public, academic, and school libraries, the quality of reference and information services actually delivered on a routine day-by-day basis has not improved to any degree remotely comparable with the improvement in the tools available to the reference librarian. . . .
>
> The situation is one where the technology (not just computers or machines, but the whole array of tools and resources—print and nonprint, traditional and unconventional—available for the purpose of gaining access to knowledge records) has developed more rapidly than has our capacity or our *will* to make the most effective use of it, except in the form of specialized services to limited client groups (*14*).

Katz has noted that:

> Few libraries limit their services to any of these levels of reference service. One user may receive minimal help, another maximum. One librarian may believe in one type of service, another in another type. The result is that laymen have no exact concept of what it could mean for them if the library did offer total, maximum reference service (*15*).

The Functions of the Reference Librarian Today

Larger libraries are characterized by one or more separate reference service units, staffed by individuals for whom the provision of reference and information service is a major or exclusive responsibility. Even in smaller libraries, some individual on the staff (often the chief librarian) is available to provide assistance to users. Special client groups such as children, business and industry, and undergraduates may be served through separate service points. Commonly, reference service includes, at a minimum:

1. Assistance and instruction (formal or informal) in the use of the library, including the location of materials, use of the catalog, and use of basic reference tools and sources such as indexes, dictionaries, etc.
2. Assistance in the identification and selection of books, journals, and other materials relevant to a particular informational need. This may be limited to assistance in the location of pertinent materials, or it may extend to the selection and evaluation of materials on a given topic.
3. Provision of brief, factual information of the "ready reference" variety, particularly such information as names, addresses, statistics, etc., that can be located quickly in a limited group of general reference sources.

Amplified reference services may be characterized by the addition of one or more of the following functions for reference personnel:

1. Conducting literature searches and compiling bibliographies on topics about which information is sought, or is expected to be sought, by users
2. Preparing guides and aides to use of the library and its collections
3. Constructing special indexes and maintaining special files (eg., pamphlets, documents, clippings, obituaries, etc.)
4. Interlibrary loan
5. Abstracting
6. Translation
7. Selective dissemination of information to clients
8. Editorial and publishing services

Reference Services—Current Developments, Trends, and Issues

To a very significant extent, contemporary reference service in libraries can still be characterized in terms of those basic themes and concepts that have been significant in its development over the past century. For example, the debate over the kind and amount of reference and information service which ought to represent either the goal or the norm for each type of library remains unresolved. The conservative theory of reference is reflected in the continued limits on the extent and nature of service to be provided and on the amount of time to be devoted to a single inquiry, and also in the restrictions on the provision of information in certain subject areas, such as medicine and law. This is also shown in the unwillingness of librarians to be held accountable, either to users for the validity of published information, or to library authorities for the uses to which information may be put by clients. By contrast, within many disciplines, nonlibrary, specialized information centers that utilize subject specialist staff and electronic means of information storage and transmission are growing in importance; while the new professions of information broker and information counselor increasingly challenge the traditional hegemony of the reference librarian. General libraries continue, however, for the most part, to exhibit a minimal approach to the provision of reference assistance and information service; this reflects the persistence of the egalitarian view that a library, especially if publicly supported, ought not offer specialized services to some which it is unprepared or unequipped to offer to the entire clientele.

An interesting issue has arisen, particularly for public libraries, as a consequence of the growing need for prompt, accurate information on the part of business, science, and industry, combined with the increasing availability of on-line, computer-based bibliographic and data information services. The first, and still most fully developed, example of these is the MEDLARS/MEDLINE system of the U.S. National Library of Medicine. Two major American commercial information firms, Lockheed and the Systems Development Corporation, have recently made a large number of computerized data bases available in an on-line mode for interactive searching. Public and academic libraries that have installed terminals in order to offer these new services to their clients have quickly discovered that the library's budget usually cannot absorb the additional costs. Many libraries have

begun to pass the charges along to users, and as a result, those who cannot afford to bear this expense are effectively deprived of the use of the specialized services. The Minneapolis Public Library is one of a growing number of large, public, academic and research libraries to have established a special unit to provide in-depth reference service to business and industry on a fee basis.

In a parallel development aimed at another special client group, in this instance the disadvantaged, public libraries (particularly those located in urban areas) began in the 1970s to create information and referral centers (I&R). Katz characterized these as follows:

> The essential purpose of the community information center is to reach out to both users and nonusers of the library and reference service. It is an effort to adapt the library to the needs of people, instead of asking them (as was the case too often in the past) to adapt to the needs of the library and the librarian. Centers tend to be opened in urban districts, heretofore without library service. The poor and general nonlibrary user is often unable to reach the larger library. In addition, convenience of location is provided in the atmosphere of the area the nonuser knows. In cities with extensive branch libraries, the centers tend to operate within the library, as an extension of the reference function—but with special personnel and services (*16*).

I&R services emphasize making information *intellectually* accessible to clients who may have limited ability to utilize conventional reference tools and printed resources. Consequently, these services commonly draw upon unconventional resources, such as experts from the community; they emphasize practical information relating to basic human needs for food, clothing, shelter, employment, health services, and the like; and they strive to work in close concert with both governmental and voluntary community agencies.

As suggested earlier in this overview, the application of the computer (since World War II) to the problems of information storage and retrieval has had a major impact on the character of reference and information services provided, particularly on those available to the clienteles of special and academic libraries. Since 1950 libraries have housed an increasing number of both experimental and operational computerized information systems designed to take advantage of the extraordinary capacity of the computer to store, update, and recombine data. The computer has been of particular significance in the indexing and abstracting of documents, in the creation of automated systems for the selective dissemination of information to users, and in the establishment of both specialized (such as MEDLINE) and general (such as the Ohio College Libraries Center and the New York Times Information Bank) networks for the interlibrary dissemination of both bibliographical citations and factual information.

Also worthy of note is the movement, since 1950, toward the creation of public library systems, one result of which has been to make expert reference service available for the first time to residents of communities where the population base is too small to support professional staff in the context of an independent local library. The provision of systemwide reference service has typically been a high priority in state plans for improved library services and also on the action agendas

of newly created regional library systems within the states. Extensive use has been made of telephone and teletype, both to expedite the location of books and journals for interlibrary loan and to provide answers to ready reference questions which cannot be handled through the limited resources available in smaller local libraries.

Despite these examples of a growing tendency to supplement bibliographic services with information services, and to substitute information delivery for document delivery as the end product of the reference process, interest remains high in improving instruction in the use of the library. Notable experiments in integrating the academic library into the instructional process were carried on at Stephens College in the 1930s under B. Lamar Johnson and at Monteith College of Wayne State University under Patricia Knapp in the 1950s (*17*). The formation in January 1977 of a Library Instruction Round Table by the American Library Association indicated that the commitment among reference librarians to the instructional function remains intense. Of particular interest in this respect is the Model Libraries Project (a part of Project Intrex) conducted at the Massachusetts Institute of Technology to demonstrate the feasibility of the use of the computer to organize and access library holdings. The Model Libraries Project developed the concept of the "library Pathfinder," which was designed to help the inexperienced user locate library materials quickly on an unfamiliar topic. More recently, many libraries have experimented successfully with the adaptation of audiovisual materials to "point-of-use" instruction in specific library tools and techniques. Combining the concepts of the pathfinder and computer-managed instruction in the interactive mode, the Penrose Library at the University of Denver is currently experimenting with the use of a computer-stored bibliographic data base to create library pathfinders on demand for students on specific topics.

The character of the reference process remains a central focus of research and teaching interest. The view is widely held that in order to improve the quality of reference and information service, it is first necessary to achieve a deeper and clearer understanding of human behavior in the information seeking mode. Recent studies have centered on attempts to chart and describe in detail the question-negotiation and information-seeking processes, and to develop fuller understandings of both the reference interview (the procedure by which the language of the inquiry is translated into the language of the information system) and the manner in which data is converted into information by the inquirer (*18*). In the latter respect, research of particular significance is currently in progress at the Graduate School of Library and Information Sciences of the University of Pittsburgh, where a unique laboratory has been created to study the basic nature of information transfer. Rees, discussing the complexity of the reference process, noted that it:

> . . . incorporates the sum total of variables involved in the performance of reference work by an intermediary designated as reference librarian. It includes both the psychology of the questioner and the environmental context within which the need for information is generated, together with the psychology of the reference librarian and the reference sources employed. Reference service is the formalized provision of information in diverse forms by a reference librarian, who is interposed between the questioner and available information sources. Reference work

> is the function performed by reference librarians in providing reference service. The perception on the part of the librarian of the need of the questioner is an important part of the reference process. The formalized representation of this need is the questiton, which may or may not be an adequate expression of the underlying information requirement.
>
> The reference process, therefore, comprises a complex interaction among questioner, reference librarian, and information sources, involving not only the identification and manipulation of available bibliographic apparatus, but also the operation of psychological, sociological, and environmental variables which are imperfectly understood at the present time (*19*).

The very complexity of the reference process, in turn, makes the problem of the measurement and evaluation of reference and information services a singularly formidable one. As yet, no wholly satisfactory method has been developed either for reporting reference activity quantitatively, or for evaluating the outcome of the reference process. In a related activity, the Reference and Adult Services Division of the American Library Association has been concerned with the formulation of standards for reference service, as has the Library Association in Great Britain (*20*). Perhaps the ultimate standard by which reference service may be evaluated, however, is that proposed by Grieg Aspnes:

> The ultimate theoretical (and practical) goal of any reference library or information center must be to supply its users with all the information and only the information, they need, at the lowest possible cost (*21*).

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REFERENCES

1. Samuel Rothstein, *The Development of Reference Services Through Academic Traditions, Library Practice and Special Librarianship*, p. 20.
2. Louis Kaplan, *The Growth of Reference Service in the United States from 1876 to 1893*, p. 3.
3. Rothstein, *Development of Reference Services*, p. 30.
4. Samuel S. Green, "Personal Relations Between Librarians and Readers," p. 78.
5. Rothstein, *Development of Reference Services*, pp. 54–55.
6. Rothstein, *Development of Reference Services*, p. 72.
7. James I. Wyer, *Reference Work*, p. 6; Samuel Rothstein, "Reference Service: The New Dimension in Librarianship," in *Reference Services* (Arthur Ray Rowland, ed.), Shoe String Press, Hamden, Conn., 1964, p. 39.
8. Ainsworth Rand Spofford, *A Book for All Readers*, Putnam's, New York, 1900, p. 213.
9. Wyer, *Reference Work*, pp. 6–7.
10. Rothstein, *Development of Reference Services*, p. 77.
11. Rothstein, "Reference Service," p. 40.
12. Mary Edna Anders, "Reference Service in Special Libraries," *Lib. Trends*, **12**, 397 (January 1964).
13. Leonard H. Freiser, "Information Retrieval for Students," *Lib. J.*, March 15, 1963, p. 1121.
14. Thomas J. Galvin, "The Education of the *New* Reference Librarian," p. 728.

15. William A. Katz, *Introduction to Reference Work*, Vol. 2, *Reference Services and Reference Processes*, p. 60.
16. Katz, *Introduction to Reference Work*, Vol. 2, p. 51.
17. B. Lamar Johnson, *Vitalizing a College Library*, American Library Assoc., Chicago, 1939; Patricia B. Knapp, *The Monteith College Library Experiment*, Scarecrow, New Jersey, 1966.
18. Attempts to chart the reference process are summarized in Katz, *Introduction to Reference Work*, Vol. 2, pp. 125ff. Studies of special significance relating to the reference interview include: Robert S. Taylor, "Question-Negotiation and Information Seeking in Libraries," and Patrick R. Penland, *Interviewing for Counselor and Reference Librarians*.
19. Alan M. Rees, "Broadening the Spectrum," in *The Present Status and Future Prospects of Reference/Information Service* (Winifred B. Linderman, ed.), American Library Assoc., Chicago, 1967, pp. 57–58.
20. Standards Committee, Reference and Adult Services Division, American Library Association, "A Commitment to Information Services: Developmental Guidelines," Chicago, January 1976, mimeographed; and Library Association, "Standards for Reference Services in Public Libraries," *Lib. Assoc. Rec.*, **72**, 53–57 (February 1970).
21. Grieg Aspnes, "Comment," *Lib. Assoc. Rec.*, **72**, 166 (February 1970).

SELECTED BIBLIOGRAPHY

Adult Services Division, American Library Association, *Library Rights of Adults: A Call for Action*, Chicago, 1970.

Bishop, William Warner, "The Theory of Reference Work," in *The Backs of Books and Other Essays in Librarianship*, Williams and Wilkins, Baltimore, 1926.

Blakely, Florence, "Perceiving Patterns of Reference Work," *RQ*, **11**, 30–38 (Fall 1971).

Cheney, Frances N., *Fundamental Reference Sources*, American Library Assoc., Chicago, 1971.

Crowley, Terence, and Thomas Childers. *Information Service in Public Libraries*, Scarecrow, Metuchen, N.J., 1971.

"Current Trends in Reference Services," *Lib. Trends*, **12**, (January 1964).

Dewey, Melvil, "The Faculty Library," *The Library*, n.s., **2**, 238–241 (1901).

Galvin, Thomas J., *Current Problems in Reference Service*, Bowker, New York, 1971.

Galvin, Thomas J., "The Education of the *New* Reference Librarian," *Lib. J.*, April 15, 1975, pp. 727–730.

Gardner, Jeffery J., and David M. Wax, "Online Bibliographic Services," *Lib. J.*, September 15, 1976, pp. 1827–1832.

Green, Samuel S., "Personal Relations Between Librarians and Readers," *Lib. J.*, **1**, 74–81 (October 1876).

"Information and Referral Services in the Public Library," *Drexel Lib. Quart.*, **12**, (January–April 1976).

Kaplan, Louis, *The Growth of Reference Service in the United States from 1876 to 1893*, ACRL Monograph No. 2, Association of College and Reference Libraries, Chicago, 1952.

Katz, William A., *Introduction to Reference Work*, 2nd ed., McGraw-Hill, New York, 1974.

Linderman, Winifred B., *The Present Status and Future Prospects of Reference/Information Service*, American Library Assoc., Chicago, 1967.

McElderry, Stanley, "Readers and Resources: Public Services in Academic and Research Libraries, 1876–1976," *College Research Lib.*, **37**, 408–420 (September 1976).

Penland, Patrick R., *Interviewing for Counselor and Reference Librarians,* Univ. of Pittsburgh, Pittsburgh, Pa., 1970.

Robbins, Jane, "The Reference Librarian: A Street-level Bureaucrat," *Lib. J.,* April 15, 1972, pp. 1389–1392.

Rothstein, Samuel, *The Development of Reference Services Through Academic Traditions, Library Practice and Special Librarianship,* ACRL Monograph No. 14, Association of College and Reference Libraries, Chicago, 1955.

Rothstein, Samuel, "Reference Service: The New Dimension in Librarianship," *College Research Lib.,* **22,** 11–18 (January 1961).

Rowland, Arthur Ray, ed., *Reference Services,* Shoe String Press, Hamden, Conn., 1964.

RQ, Official Journal of the Reference and Adult Services Division, American Library Association, quarterly.

Schiller, Anita R., "Reference Service: Instruction or Information," *Lib. Quart.,* **35,** (January 1965).

Taylor, Robert S., "Question-Negotiation and Information Seeking in Libraries," *College Research Lib.,* **29,** 178–194 (May 1968).

U.S. Bureau of Education, *Public Libraries in the United States of America: Their History, Condition and Management,* Part I, Government Printing Office, Washington, D.C., 1876.

Wilson, Patrick, *Two Kinds of Power,* Univ. of California Press, Berkeley, 1968.

Wyer, James I., *Reference Work,* American Library Assoc., Chicago, 1930.

THOMAS J. GALVIN

REGISTRATION OF BORROWERS

See *Borrowers Registration*

REMODELING*

The decision to remodel a library building or to renovate and add space to an existing building generally follows from the same decisions one faces when considering the construction of a completely new building. Most often mentioned as reasons for considering any of these actions are the growth of the library's book collections, the increased seating needs, increased space for staff, and the need for including newer services in libraries, such as larger microform areas, multimedia areas, or mechanized data retrieval systems. However, there is another factor of particular importance in the decision to remodel or renovate and add: the

overriding considerations of the condition of the existing physical facility and the suitability of its site. In considering the existing building site, one must ask: have the original advantages of the site continued and are they likely to continue into the future? Centrality of site is important. For a public library, one asks: is the original site still in the center of the business district or neighborhood area? For an academic library, one asks: is the original site still in the center of classroom space and dormitories or parking lots? For a school library, one asks: is the site the best for access by the students from their classrooms and study halls? In addition to these considerations, one must also consider the total size of the original site. Here one asks: is there space for anticipated expansion if a further addition is being planned and, if not (or even, if so), is there space for still further addition at some future date? Finally, in arriving at the decision to remodel or renovate and add, an overriding principle to be considered is the actual cost savings that can be realized by remodeling or renovation and addition, as opposed to total new construction at present inflationary construction costs.

Often the decision is made to renovate the old facility and add new space to the original building. Such a decision carries its particular challenges. Traffic patterns become extremely important when joining two separate spaces. The location of stairs may have to be changed. The principal entrance to the joint structure may be moved. In some of the better examples of renovation and addition, a whole exterior wall of the old building was removed and the new space abutted against the existing space, thus creating one interior space rather than two separate spaces joined together. The advantages of flexibility for function are apparent. When renovating and adding, the matching of both interior and exterior materials must be considered. Often when the new space is constructed next to an old building, the exterior material on the original building must be cleaned. There is the problem of matching the new facing with the old overall or of choosing a new material to complement the original material. The matching of exterior materials may be very expensive, especially if the original structure was built in some previous era in the economy and an expensive material was used at that time. Even so, whether remodeling or renovating and adding, there generally are significant cost savings per square foot, as opposed to a completely new building at today's construction costs.

In both remodeling and renovation and addition, there are challenges which one does not face in the creation of new space. The following are a few such challenges to be met which do not occur with the construction of a completely new building. First, blueprints, if they exist at all, are probably not updated to the present status of the building and, therefore, represent erroneous information. Such prints must be carefully checked against the existing structure of today, or "as is" drawings must be prepared by actually going over the existing space very carefully, noting all measurements and details of earlier construction. Often the existing floor structure is not sufficient to support bookstacks and must be reinforced, either by large floor beams (which reduce the headroom on the floors below), or by the addition of columns (which reduce the usable floor space of the floors below), or both.

A particular challenge to be met during the remodeling or renovation and addi-

tion of space is how to carry on the library function during the construction work. The librarian and his staff have the following three options to meet this challenge: (*a*) to relocate completely within another structure during the remodeling; (*b*) to partially relocate so that construction work can proceed in one area of the building while another is still occupied; and (*c*) to move within and about the building several times during the construction period. Each of these options, of course, has its own cost and convenience factors. Obviously, the choices should be preferred, if possible, in the order in which they are listed here. Very often the remodeling must take place while the work of the staff within the library continues without interruption. Sometimes a function or operation may have to be moved several times within the existing space during the remodeling before its new permanent space is completed. The noise of the construction is a continual interference. Dust and odors may be picked up through the building's ventilation system and redistributed in other parts of the building. On some occasions it may even be necessary to require that staff not work during a special period or in a special area of the construction, and the library administration is faced with the problem of having to pay staff for the forced layoff. Often the time periods for particular phases of the remodeling have to be extended and these, in turn, extend the total construction period. Some of these factors indicate that a larger than usual contingency fund is required for remodeling than that generally provided for completely new space construction. Especially in this respect, the extent of work—plumbing and electrical work, particularly—is often underestimated. Finally, one library administrator has even spoken of the challenge to the construction workers on the job to maintain proper decorum and language when in the presence of library staff and patrons.

Regardless of the size of the job, whether a few thousand square feet or several hundred thousand square feet, remodeling or renovation and addition of space should begin with an analysis of needs and a statement of the program to meet these needs. During the period of analysis, particular attention must be given to floor levels and floor loads; walls (whether or not existing walls are load bearing); the extent to which one wishes to clean, reclaim, or enhance old materials; and in some cases, whether or not unusually high-ceilinged rooms can be made into separate floors or have a mezzanine constructed within the existing space. The planners must consider how much of a change is required. Is the lighting adequate or should it be replaced? Is the building well ventilated or is it of such age that a completely new heating, ventilating, and air-conditioning system must be considered?

Following such an analysis of the extent of the remodeling, a program must be written. The program should state the philosophy and objectives of library service. It should speak of future changes anticipated in the development of libraries. It should define clearly the library function and it should speak to general preliminary cost estimates, projected timetables, and expected capacities for books, readers, staff, and space for services within the remodeled or additional space. Following these considerations, a general program statement should be prepared concerning

the comfort expected in the new building (heating, ventilating, floor covering, acoustics, lighting) and the flexibility of the building (with particular reference to floor loads, ceiling heights, modules, windows, walls, electrical capabilities, lighting, service cores); and, of course, traffic patterns should all be spelled out. Most of these factors become of particular interest in remodeling when new spaces are being constructed to be joined to the old. Finally, the various areas of the building and their spatial relationships to each other must be described in detail. Careful attention must be given to the full description of all library functions—the processing areas, public service areas, staff quarters, administration of the library, exhibit and display areas, the storage of material in any special use areas such as rare book rooms and lounges, snack bar areas, or even a first aid room. When the librarian and his staff, hopefully with the aid of a consultant, have prepared such a program statement, it is then time to call in space design experts such as interior designers and architects.

It is important to say something about remodeling other facilities for use as libraries. Schools, stores, and churches are likely candidates for such remodeling. At the present time, a bill has been introduced in the Pennsylvania State Legislature to authorize grants for conversion of unused school buildings for related "efficient, alternate" uses, including libraries. There are instances of churches being converted to library uses, and, in Greenwich Village in New York City, the former Jefferson Market Courthouse (commonly and affectionately referred to as "Old Jeff") has been remodeled into a neighborhood library. As school standards have demanded library services for the students, it has been common to remodel classroom space as libraries or learning centers. Finally, it is not unusual at all to take over storefronts and office space in hospitals and businesses to create libraries. In one case, this was done very cheaply, for the library of the Halifax District Hospital at Daytona Beach, Florida—where the earlier small library was remodeled and enlarged from the librarian's sketches, detailed by an architectural studies student from the local junior college, and executed by the hospital's maintenance crew.

In his conclusions to an unpublished report, H. Paul Dove, Jr., has listed the following general conclusions concerning remodeling, renovation, and additions:

> A. Each project in addition-renovation construction is unique, specialized, and conforms to local needs and limitations.
> B. Addition-renovation projects are basically utilitarian. These recent projects were as a rule much less ostentatious than the older libraries they replaced.
> C. More and more colleges and universities will resort to addition-renovation projects since [they are] generally much cheaper; it is impossible to duplicate square footage for anything near the cost of such projects.
> D. Each project will be relative to the creativity of the planner.
> E. The degree of flexibility or renovation in the older building dictates much to the function and efficiency of the new wing.

Although these conclusions by Dove are for college and university libraries, they certainly can be applied to the remodeling, or renovation and addition, of library space for school, public, and special libraries as well.

BIBLIOGRAPHIC NOTE

Little general information on remodeling is found in the library science literature. Articles relating single experiences abound, but, even then, they are more often on "renovation and addition" than "remodeling." Of particular help in the preparation of this article was the work of H. Paul Dove, Jr., in an unpublished report entitled "College and University Library Renovation Projects." His report is based on his study in 1974, made possible through a grant from the Council on Library Resources.

HAL B. SCHELL

REPROGRAPHY

"Reprography," as a term, has recently gained international recognition as an accepted expression substituting for "copying," "photocopying," and "reproduction." The term was first introduced at the First International Congress of Reprography, which was held in Cologne, Germany, in October 1963 (*1*). Reprography is difficult to define. Ibrahim defines it as a "technology of producing or reproducing visual communications in an inplant operation" (*2*). Landau, on the other hand, defines it as "the art of producing single or multiple copies of documents, whether by photographic or other means" (*3*). Both definitions, however, are unsatisfactory, as they could apply to photocopying and also to printing and computer output. A better understanding of the term may be reached by examining its scope and its major characteristics that could be applied, generally, in all situations. Therefore, one can describe reprography as follows: it includes "photocopying, microcopying, duplicating and in-plant printing and it is in general characterized by the small scale of its operations and the non-professional nature of its operatives" (*4*).

The first photographic process was invented in 1829 by the French painter Louis Jacques Maude Daguerre, who was able to produce photographic images on iodized silver plates developed with mercury vapor (*5*). The use of the process in copying printed materials, however, started about 1914, 75 years later. The delay was due to the fact that Daguerre's process, known as daguerrotype, was able to produce subtle gradations of tones, but not deep black or clear white. The process, therefore, was used in making portraits but not in copying text, which requires high contrast. It is interesting to note also that in 1839 John Benjamin Dancer introduced microphotography by using Daguerre's plates and a lens capable of reducing images at the ratio of 160:1. Thus, the development of microphotography occurred almost with the introduction of photography. In 1852 Dancer was able to produce a transparent microphotograph, which is considered the "forerunner of the modern microfilm" (*6*).

In 1839 Albrecht Breyer, a Belgian medical student, invented reflectography for the specific purpose of copying pages of books (*7*). Reflectography, which did not

require the use of a camera, was an ideal method for manuscript copying and library work. The process is known today as the reflex and contact process (*7*).

In 1841 Talbot introduced for the first time his negative-positive technique using sensitized paper rather than metal plates. Although the details of the copies were not near the quality of daguerrotype, it was an easier and cheaper method and it was capable of producing duplicates (*8*). Talbot is known as the inventor of photography as we know it today, sharing the honors with Daguerre (*6*).

The possibilities of the use of microphotography in publishing were recognized in 1853 by Sir John Herschel, who foresaw the future use of microscopic editions of reference works and pocket size notes and manuscripts (*9*). He foresaw also the possibility of reducing bulky materials to manageable sizes that are easy to handle by both researchers and librarians. In fact, he envisioned the use of the microscopic lens to read works produced by microphotography. The first large-scale use of microphotography was for messages delivered by carrier pigeon during the siege of Paris in 1870 (*10*).

Another step in photography was made by the introduction of the collodion emulsion on glass, developed by F. S. Archer in 1851. A dry plate was added in 1873 to simplify the process, and that again contributed to the acceptability of photography and its future use in the library field (*11*).

Because of Talbot's idea of using photography as a means of "photocopying," people in other countries adopted and developed this approach. In 1860 the U.S. Commission of Patents considered photography as a method for public reproduction of patent diagrams (*11*). Photography laboratories were also set up in major libraries in Europe in order to have photographic reproductions available for the library users.

American readers evidently gave some thought along these lines and suggested to *Notes and Queries* that libraries make facsimiles of rare manuscripts. The editor of that publication replied by indicating that the subject had already been examined and that he had, in fact, a photographic copy of a 14th-century manuscript (*12*). In 1853 Albert Blor, an Irish lawyer, proposed that card catalogs could be made by photographing the title pages of books (*13*). Despite these suggestions, photography was little used in libraries during the latter half of the 19th century. However, some library projects were carried out in that period by the use of photography. One of these projects was the photobibliography of Harry Stevens, the American book collector and bibliographer. Stevens suggested that the title pages of his rare and valuable books be photographed and reduced one-third in size and mounted on 4-by-6-inch cards on which written bibliographical information could be added by hand. The suggestion was implemented by Stevens himself in relation to his own rare book collection, and in 1872 he published a printed catalog of these cards (*14*).

Stevens's idea was well publicized and a number of noted librarians discussed its merits and disadvantages. Among them was Richard Garnett, English librarian and superintendent of the Reading Room at the British Museum, who was impressed by Stevens's idea and recommended in 1899 that the British Museum es-

tablish a photographic department (*15*). Also, Princeton University Library cataloged a collection of its rare books by Stevens's method (*16*). On the other hand, Melvil Dewey discussed the plan and did not consider it practical (*17*).

Other projects followed between 1858 and 1905, mainly concerned with the photocopying of rare manuscripts. The stimulus for these projects came from European scholars who felt handicapped in having to travel widely to examine source material, copies of which could be acquired only by hand copying, or by tracing if facsimiles were necessary. In America, scholars increased their demands for the original source material located in European libraries. In 1909 Melvil Dewey urged the American Library Association to organize a project for reproducing facsimiles of scholarly works in foreign libraries (*18*). These projects, however, never materialized, mainly because of economic reasons. The photographic method common in 1900 was lengthy and costly. It required expensive glass plates and complex laboratory work; and it was more expensive than hand copying, and not much faster. What was needed was a simple, fast, and cheap process designed especially for copying textual materials.

The continuing advancement of photography led, at the turn of the century, to notable events. The National Photographic Record Association was established in 1897 by Sir Benjamin Stone for the purpose of creating local societies to provide photographic documentation for researchers (*19*). In 1905 the International Congress for the Reproduction of Manuscripts, Money and Seals met in Belgium. At this meeting Professor Charles Gayley of the University of California suggested the need for photographic reproduction of rare materials to preserve them and make them accessible to researchers (*20*). These events made it clear that libraries were ready to reproduce materials and to collect reproduced materials (*21*).

The breakthrough came from France in 1900, when Abbé René Graffin, a professor at the Institute Catholique in Paris, invented the photostat process, which was designed specifically for copying from books. The process involved a conventional camera with a lens fitted with a prism, and it made copies on a roll of bromide paper which was very sensitive to light. The paper replaced the expensive glass, and copies, therefore, were made more cheaply (*22*). The prism served two purposes. First, it reversed the image in the camera so that a positive copy was produced directly on paper; and second, it allowed both the camera and the book to be placed on a horizontal platform, one above the other, which made it easy to copy from bound volumes. Graffin exhibited his apparatus at the World's Fair in 1900 and was awarded a silver medal.

By 1909 the photostatic process was used in many major libraries in Europe. The process went unnoticed in the United States until 1910. The Photostat, a machine which could copy from books as well as unbound material, was intended for office use. In 1911 the device was recommended for the government's use by President Taft's Commission on Economy and Efficiency (*23*). As a result many government agencies installed and used photostatic equipment. One of these agencies was the Library of Congress. This was followed by the John Crerar Library, the New York Public Library, Connecticut State Library, Harvard University Library,

and Princeton University Library. By 1929, 42 libraries in the United States owned and operated photostatic machines (*24*).

Wilberforce Eames was one of the first American librarians to add photocopying to library services. In 1912 Eames, then the head librarian of Lenox Library at the New York Public Library, photocopied rare books, manuscripts, and pamphlets in small editions and distributed them at a normal fee to libraries and historical societies (*25*). These works were so valuable that none of the libraries could possibly have obtained the original copies.

In 1920 Photostat was also used at the New York Historical Society to preserve newspapers in danger of deterioration. In addition, Photostat was used in critical bibliography and research work. With the aid of copies of different editions of the same book, a scholar could sit in his own office and compare his copy of a given book with those in the Bodleian Library, the British Museum, etc. In fact, some discoveries were made by means of photostatic copies, which "placed bibliography among the exact sciences" (*26*). Reader services also benefited from the use of Photostat. In 1923 demands by the public for photocopies from the New York Public Library increased to 6,747 requests for which 58,029 copies were made, compared to 511 requests in 1913 (*27*). During 1946 the same library made almost half a million copies and in 1955 the demand became so great that the library began a rapid "while-you-wait" photocopying service (*28*). By 1932 many librarians were using photostatic equipment to reproduce catalog cards at a cost of 3½ cents per card (*29*). The advantages of photocopying over note-taking and typing were recognized: Besides saving time and effort, photocopies provided the user, upon demand, with an absolutely accurate copy of any given work, rare or out of print.

While Photostat was in use, advancements were being made to utilize other methods of photocopying. In the 1950s and '60s several useful methods of photocopying documents were introduced. These new processes can be grouped under six categories: diffusion transfer, physical transfer, quick stabilization, diazo, thermography, and electrostatography.

1. *Diffusion transfer* is a process that requires two specially prepared papers. One is a negative paper which is sensitive to light, and the other a positive paper which is not. Both papers contain chemicals which develop the image. After the negative paper is exposed to the material to be copied, it is covered with the positive paper and inserted in a processing machine where both papers are tightly pressed together by a roller. The two sheets then pass through a chemical solution which causes the image to develop. The sheets emerge slightly damp and are left in contact for 30 seconds, during which the negative image transfers to the positive paper by a chemical reaction. The two sheets are then peeled apart revealing a negative and a positive copy. The operation takes less than 2 minutes, and the negative can be reused only once to make an additional duplicate. The process is not permanent as a transfer copy—lasting from 5 to 20 years. A transfer copy can be made permanent, however, if it is washed thoroughly free of chemicals. That also prevents it from turning yellow (*30*). Transfer equipment found an open market among small offices and libraries which could not afford photostatic equipment and had a modest amount of copying to do.

2. *Physical transfer*, known also as gelatin transfer, requires both a negative and a positive paper, as the previous method. The difference is that the negative paper is covered with gelatin containing a light-sensitive chemical, a dye, and a component which hardens the gelatin. The copy is made by exposing the positive paper to the material to be copied. The positive is exposed to the negative sheet, which is immediately soaked in a solution which forms a black dye in the gelatin and hardens the exposed parts only. The soft gelatin image can readily transfer the image to any sheet of paper pressed against it. Up to six copies can be made from the same negative, but each successive copy is lighter and less clear than the preceding one. Physical transfer is cheaper than diffusion transfer, but it is less permanent and is more delicate, as it requires cool temperature and an air-conditioned room.
3. *Quick stabilization* is similar to a photographic process but much simpler and faster. It uses only one type of coated paper for both negative and positive copies. The first copy is white on black, from which one can make any number of black on white copies. The copies emerge damp and require drying before use. The advantage of this process is that it can be performed in seconds using a small, simple, and inexpensive machine. The major advantage over photography is that in stabilization the positive copy is fixed by a single treatment: the unused silver halides on the positive copy do not need to be washed out repeatedly because the process converts them chemically to compounds that are insensitive to light. Therefore, in this process the darkroom equipment and plumbing facilities are eliminated (*31*).
4. *Diazo*, or dyeline copying, is a process which was used extensively for a while, in business and industry. Its early application in libraries was limited to administrative work because it was not capable of copying pages of bound books.

   Diazo is a process which makes copies by means of dyes, in any desired color. It is a direct process that makes a positive from a positive and a negative from a negative. The process is based in principle on the fading of certain dyed material on exposure to light. If a dyed paper is exposed to light under a transparent original containing black letters, the latter will protect the dye from bleaching, while the blank parts of the original will permit the light to bleach the dye. The result is a facsimile copy. In practice, the paper is coated with a colorless dye chemical. After exposure the paper is exposed to ammonia gas, which changes the colorless chemical to a colored dye. The development of diazo papers may also take place in a chemical solution. This process is known as semidry or semiwet diazo. Diazo is a simple, rapid, and inexpensive method which produces a copy in 1 minute for less than 2 cents. Diazo copies, however, are not permanent; they have a life of about 25 years (*32*). Also, photographs do not reproduce well by diazo. In addition, the ammonia gas used in the process necessitates the use of proper ventilation.

   With the introduction of the Copyflex the diazo process was applied to copying both books and letters. The process offers libraries a rapid and inexpensive means for reproducing catalog cards in limited quantities and for preparing abstract cards.
5. *Thermography* is the simplest and fastest of all the methods discussed so far. It is unique in that it produces a copy in a single step. Thermography is not a photographic process. Its process is based on the utilization of heat, which comes from an infrared light. The copy is made through contact. The infrared light passes through the copy paper to the original. The black parts of the original absorb the light, converting it into heat which is reflected back to the sensitive surface of the thermographic paper, where a chemical reaction changes

the heat-sensitive substance into a black deposit (*33*). The blank portions of the original do not absorb light and have no effect on the copy paper. This results in a one-step positive copy which can be used again to add material to the blank portions on it. The disadvantages of this method are that the copying paper is very thin, and the copies of small type are slightly fuzzy as the letters tend to thicken and fill in. Thermographic copies, however, are permanent, cheap, and fast. The process offers libraries a simple and a rapid method of copying office documents and other unbound administrative material.

6. *Electrostatography* is an electronic process which depends on the conversion of light into electricity. This is the most recent development in the field of photocopying. It produces permanent, durable, and cheap copies and requires no chemical solutions or reactions of any kind. Electronic processes also possess a unique characteristic of special interest to libraries: They can, in connection with a telephone line, copy instantaneously any document that may be in one location while the copier is at another. The best known type of electrostatography is Xerography, which was invented by Chester Carlson.

Chester Carlson (1906–1968) worked ever since he could remember. His father had been stricken with crippling arthritis and both of his parents had tuberculosis. When his mother died in 1923, he had to care for his father while attending college at the California Institute of Technology, where he learned about copying machines. In 1930 he earned a B.S. in Physics. Unfortunately, he received his degree at the peak of the depression period and jobs were scarce. Carlson wrote to various firms, but to no avail. He finally moved to New York and worked for Bell Telephone Company and Austin and Bix. Later he landed a job in the patents department of P. R. Mallory and Company. This job paved the way for his future invention.

Carlson's responsibility was to copy the drawings and specifications for patents. At this time, Photostat was the only method available, and it was slow and expensive. After working long hours, he finally conceived the idea that there must be a quicker way of making a copy. In the meantime, he also decided to attend night school to earn a law degree, since his salary was not sufficient. Thus, he took classes in the evenings and used the New York Public Library to copy by hand the textbooks which he could not afford to buy. This experience gave him an incentive to develop a method for making quick copies.

He thought of trying to use optical exposure to obtain electrostatic image patterns of the materials to be copied, and then dust them and transfer the dusted images to paper (*34*). Carlson conducted several experiments in his apartment, where his laboratory was in a closet. Unfortunately, the chemicals (especially sulfur) smelled throughout the building; and he was compelled to take his experiment to his mother-in-law's home in Astoria, Long Island, where he discovered a primitive process he called electrophotography, which he patented in 1937.

In order to continue his research, Carlson hired Otto Kornei, a young German physicist and engineer who had escaped Germany prior to World War II. Kornei answered the advertisement Carlson had placed, and he helped Carlson with his invention.

October 22, 1938, is considered by many observers as the birth date of the copy-

ing industry, for on that day Carlson was able to produce the first electrostatic copy. The events of that date are best described by Wharton:

> On October 22, 1938, the phrase "10-22-38 Astoria" was inked on a glass slide. A sulphur coated metal plate was rubbed with a cotton handkerchief to give it an electric charge and exposed to the glass slide for three seconds under a floodlamp. When the plate was then dusted with a powder called lycopoduim, the legend "10-22-38 Astoria" appeared on it. And when a piece of wax paper was pressed down on the plate's sulphur surface, the legend appeared on the paper (*35*).

Later the process was named "xerography," a Greek word for dry writing: copying without moist paper or chemicals.

Otto Kornei did not like the copies produced and did not foresee any possibility of a successful machine. He left his job but he remained the best of friends with Carlson. However, Carlson knew that he had the foundation for a new method for copying and he tried to sell his idea to major corporations. From 1939 to 1944 he approached 20 corporations, including A. B. Dick, IBM, and Remington-Rand. All rejected the idea and turned down his offers.

Finally, in 1944, Battelle Memorial Institute in Columbus, Ohio, agreed to do further research on Carlson's project in return for 60% of the profit. By this time Carlson had become weary of trying to convince corporations of his idea and was elated by this offer. At the same time, he strengthened his rights by obtaining four more patents for his invention.

When Battelle Institute had spent its limit on researching this invention, Carlson was given a choice: either have it continue on but with the institute receiving 75% of the profit, or come up with $15,000 to maintain his 40% profit share. He chose the latter but could not find people who would lend him the money.

By 1947 spectacular improvements had been made and the Haloid Company started negotiating the commercial rights to the machine with the institute. Haloid was the smallest of the three American companies that provided photostatic copying machines at that time. In 1960 Haloid changed its name to Xerox and bought all rights to commercialize the invention. At the same time, the company collaborated with the armed services in continuing research for further improvement of this new machine.

In 1950 Xerox machines were made available to the public. These machines were based on a manually operated process for making offset masters. In 1956 the company decided to produce an automatic copier. Despite the negative attitude toward the plan by outside consultants, Haloid went on to produce a prototype machine. In 1960 the Xerox 914 (named because of its ability to make copies up to 9″ by 14″) was introduced. The Xerox machine became an instant success. Other companies introduced other machines but none of them could match the one distinct advance of Xerography: "a dry process which did not use chemicals or require special paper, and turned out unit copies of extremely high qualities" (*36*).

One can say, therefore, that Xerography has changed the pattern of copying, and

it is considered by many as a turning point in the field of copying. In addition, it introduced in one machine the capabilities of both a copier and a duplicator.

Almost all of the above-mentioned devices found a ready market around the 1960s, partly because they satisfied a need and partly because they exercised a powerful psychological fascination on their users. The use of these devices was no longer restricted to the business world. They won over every possible field, from police departments using copiers to produce pictographic receipts for property removed from prisoners, to hospitals copying electrocardiograms and laboratory reports. Libraries and their users were no exception to this new trend.

Committing knowledge to memory is the most primitive and intangible form of copying. Writing is the old, manual way of copying. These methods were sufficient until we were confronted with the explosion of information after World War II. Faced with this problem, the reader and the scholar welcomed every possible technological innovation to cope with that flood of material. Consequently, the library role and function as a repository and distributor of information intensified, and its services became essential in a society that was becoming more and more information oriented. However, the potency of the library can be seen only when it makes its collections accessible to its users by providing needed information. Next to lending of materials, the most frequently used library service may now be photoduplication. Photocopying today is so common that it is considered a 20th-century phenomenon. Anybody with any need for a copy of anything can go to any place and most likely will find a coin-operated photocopying machine.

With this amazing development of fast and cheap copying machines, it was a simple transition for a learned person to extend note-taking to photocopying. This tended to develop further when the library and its users had to face the problem of being unable to acquire the constantly increasing number of publications. It is obvious that total user satisfaction is beyond the reach of any single library; cooperation was seen as the answer to this problem. The complication in further effective cooperation is the legal question inherent in photoduplication.

Copyright owners (mainly publishers) have been trying to control library photocopying and any cooperative efforts. They claim that such practice and efforts are causing them potential damages due to loss of sales and subscriptions, declining sales of back issues and reprints, and, as a consequence, loss of advertising revenues (*37*).

Publishers are aware, of course, that librarians are skeptical that photocopying diminishes publishers' revenues. However, they argue that common sense dictates that the ability of photocopying machines to produce multiple copies at a small cost must necessarily affect the market for published materials. The real question, therefore, is not whether photocopying by libraries affects the publishers' market, but to what extent does photocopying in libraries substitute for purchase or subscription and thus reduce the expected income of the commercial publishers? In other words, does photocopying constitute a threat to the publishing industry? Are publishers losing sales and subscriptions solely because of photocopying or are there other

factors involved? Evidence in a recent research project suggests that the loss of sales and subscriptions is due mainly to limited reading time, constraints of budget, and narrow interest. Thus, photocopying, according to this study, seems not to be the principal reason for the publishers' predicament (*38*).

When the last copyright law was enacted in 1909, the problem of photocopying of copyrighted works did not exist. The introduction of the copying machine and the current trend in copying (among other factors) necessitated a revision of the law to take into consideration the new technologies and their use. The new revised copyright law, which went into effect on January 1, 1978, deals for the first time with reprography in general and with library photocopying in particular. Photocopying, according to the new law, will be permitted under certain rather strict conditions. Who is to be blamed for these restrictions: the photocopying industry because of the rapid rise and easy accessibility to reprographic devices? or the users and librarians because of the excessive usage of these devices? The fact that statutory copyright is based on profit motive also raises a critical question of public policy: Is the interest of the copyright owner sufficient to warrant the extension of copyright control to cover library photocopying?

There is no doubt that the publishing industry, the copyright law, and library services are undergoing radical changes because of reprography. The outcome, however, remains uncertain, since the photocopying devices that created this controversy are becoming faster, cheaper, and more ubiquitous; they will certainly be of concern to all parties for years to come.

REFERENCES

1. William Nasri, *Crisis in Copyright*, Dekker, New York, 1976, p. 7.
2. Karen Ibrahim, "Exploring the Meaning of Reprography," *Graphic Arts Progress*, **16**(10), (1969).
3. T. Landau, ed., *Encyclopedia of Librarianship*, 3rd ed., Bowes & Bowes, London, 1966.
4. Peter G. New, *Reprography for Librarians*, Clive Bingley, London, 1975, p. 9.
5. J. M. Eder, *History of Photography*, Columbia Univ. Press, New York, 1945, p. 232.
6. Charles G. La Hood and Robert C. Sullivan, *Reprographic Services in Libraries*, ALA, Chicago, 1975, p. 5.
7. Arnold Sadow, "Copying Library Materials by Photographic Methods Other Than Microphotography," unpublished Master's thesis, Pratt Institute, New York, 1955, p. 2.
8. W. Ballou Hubbard, "Photography and the Library," *Lib. Trends*, **5**, 266 (1956–1957).
9. John S. K. Herschel, "New Photographic Process," *Atheneum*, July 9, 1953.
10. La Hood and Sullivan, Ref. *6*, p. 5.
11. Hubbard, Ref. *8*, p. 266.
12. *Notes and Queries*, Serial 1, **8**, 458 (November 5, 1853).
13. Albert Blor, "Photography Applied to Catalogues of Books," *Notes and Queries*, Serial 1, **7**, 507 (May 21, 1853).
14. Henry Stevens, *Photo-bibliography or a Word on Printed Card Catalogues of Old, Rare, Beautiful and Costly Books*, H. Stevens, London, 1878, p. viii.
15. Richard Garnett, *Essays in Librarianship and Bibliography*, George Allen, London, 1899, pp. 234–252.
16. Sadow, Ref. *7*, p. 7.
17. Melvil Dewey, *Lib. Notes*, **1**, 179–182 (December 1886).

18. Melvil Dewey, "Photographic Facsimiles," *Public Lib.*, **14,** 22 (1909).
19. Hubbard, Ref. *8*, p. 267.
20. "Reproduction of Manuscripts," *Lib. J.*, **30,** 929 (December 1905).
21. M. Sawyer, "The Rise and Decline of Photocopying," unpublished course assignment, LS 281, Graduate School of Library and Information Sciences, University of Pittsburgh, Fall 1976.
22. William R. Hawkin, "Full-size Photography," unpublished research paper, Graduate School of Library Science, Rutgers University, 1960, p. 6.
23. *Report of the Commission on Economy and Efficiency, December 1911*, S. Doc. 293, 62nd Cong., 2nd Sess., In. U. 36:6175, U.S. Government Printing Office, Washington, D.C., 1912.
24. Sadow, Ref. *7*, p. 13.
25. George Watson Cole, *The Photostat in Bibliographical and Research Work*, Univ. of Chicago, Chicago, 1922, p. 8.
26. Ref. *25*, p. 18.
27. August La Rocco, "The Photographic Service at the New York Public Library," unpublished Master's thesis, Pratt Institute, Brooklyn, N.Y., 1953, p. 10.
28. "Photocopies in 40 Seconds at the Library," *New York Herald Tribune*, February 8, 1955, p. 11, col. 5.
29. A. M. Monrad, "The Use of the Dexigraph in Making an Official Catalog," *Lib. J.*, **57,** 218–222 (March 1, 1932).
30. William R. Hawken, "New Methods for Photocopying," *Lib. J.*, **79,** 1123 (June 15, 1954).
31. William R. Hawken, *Photocopying from Bound Volumes*, ALA, Chicago, 1962, p. 177.
32. Sadow, Ref. *7*, p. 89.
33. Sadow, Ref. *7*, p. 101.
34. John Dessauer, *My Years With Xerox: The Billions Nobody Wanted*, Doubleday, New York, 1971, p. 25.
35. Don Wharton, "Xerox . . . The Invention That Hit the Jackpot," *Reader's Digest*, March 1965, p. 123.
36. Wharton, Ref. *35*, p. 85.
37. Nasri, Ref. *1*, p. 11.
38. Nasri, Ref. *1*, pp. 139–145.

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REPUBLIC OF HONDURAS, LIBRARIES IN

It is difficult (if not impossible) to write the complete story of libraries in Honduras. While it is certain that in colonial times the Catholic Spanish convents and churches were, for the most part, the repositories of books, folios, and documents, there is also no doubt that sages—such as José Cecilio del Valle, who drafted the Declaration of Independence of Central America; Dionisio de Herrera; and Francisco Antonio Márquez—had many treasured books of their own. This was especially true around 1810–1812; these books mainly concerned revolutionary doctrines, ideas on independence from colonial rule, the rights of man, the thought of contemporary French and English Encyclopedists, constitutional matters, etc. Proof of this is the fact that the libraries of Honduras's most prominent citizens—such as

Rafael Alvarado Manzano, Vicente Ariza Padilla, Pedro J. Bustillo, Crescencio Gómez, César Bonilla, Adolfo Zúniga, Alberto Membreño, Jerónimo Zelaya, Policarpo Bonilla, Silverio Lainez, and Rómulo E. Durón—contained early English, French, and Spanish editions of books published during the 17th and 18th centuries.

Private libraries prevailed at that time over public libraries; the latter only appeared with the creation and organization of schools, colleges, and universities, when education was primarily in the hands of monks and priests such as the Savant Father José Trinidad Reyes, pioneer and founder of the University of Honduras (September 1847). The university had the first library specifically created for the purpose of education. The only trouble was that these school libraries were used only by teachers and students, and there was no public access to them due to the illiteracy prevailing then among the common peasants and humble classes.

Officially, the creation and organization of the first public library in Honduras dates back to August 27, 1880, at the time when the government of Honduras was run by Marco Aurelio Soto and Ramón Rosa. However, it was not until the turn of the century, during the government of President Manuel Bonilla, that the first building was inaugurated, under the direction of Esteban Guardiola and with the able counsel of Antonio R. Vallejo. The new library soon began to edit an organ entitled *Revista del Archivo by de la Biblioteca Nacionales* (1904), which has the distinction of being the oldest magazine in Honduras. It later was transformed into the organ of the Geographical and Historical Society of Honduras and is now the bulletin of the Honduras Academy of Geography and History.

The first public Exhibition and Fair on Honduran Books took place in 1942 under the auspices of the Bilingual Center, Instituto Hondureño de Cultura Interamericana. Many hundreds of early and rare publications were shown, including the first book printed in Honduras and the first newspaper, the official gazette which appeared on May 25, 1830.

Recently, in 1972, in commemoration of the UNESCO program for the International Book Year, señor Juan Angel Ayes, secretary general of the Honduran Association of Librarians and Archivists, prepared and published the *Directory and Inventory*. This book contains a statement of opportunities for the improvement of the book situation in Honduras, with reflections about the problem in general and, specifically, on problems of production and distribution. It includes a useful analysis, recommendations for the formation of more libraries all over the country, plans to enrich those already functioning, and proposals for operating some as information centers, thus following constitutional provisions for the establishment and maintenance of libraries for the diffusion of culture.

The book offers a synthesis of all Honduran libraries, which appear to be deficient in number; and among its recommendations are: legislation and guidelines for financing the founding and promotion of new libraries in every school and college, the establishment of public libraries all over the country, plans to publish the national bibliography, and suggestions for library zonification. It also contains a

register of all national, university and college, public, specialized, and private libraries.

The *Directory and Inventory* gives the following library figures (as of December 1972): 73 elementary school libraries with 61,403 volumes, 58 secondary education libraries with 70,364 books, 4 university libraries with 40,940 volumes, 21 specialized libraries with 62,674 books, 1 national library with over 50,000 volumes, 17 departmental public libraries with 27,681 books, and 1 prison library with 2,800 volumes—which makes a total of 175 libraries with 315,862 volumes. There is no record of private libraries, but some of them are even richer than the National Public Library. The *Directory* includes an appendix that lists each library, with its location, year of creation, and hours of public service.

JORGE FIDEL DURÓN

REPUBLIC OF LIBYA (SOCIALIST PEOPLE'S LIBYAN ARAB JAMAHIRIYA), LIBRARIES IN

The Libyan Arab Republic covers 679,358 square miles of North Africa. The population was estimated by the United Nations to be about 1,938,000 in 1970 (*1*). Most of the population is concentrated on the coast, mainly in Tripoli, the capital, and Benghazi, the second biggest city. Farther south the population lessens, scattering out into the oases and villages.

Libya's main product is oil. Since the late 1950s this industry has employed a number of Libyan workers and this has caused notable changes in the social structure and economic level of the people. Agriculture is the country's second largest source of income.

During its history many parts of Libya were dominated by ancient civilizations: namely, the Phoenicians, the Carthaginians, the Romans, and the Greeks. The Arabs first came to the area during the seventh century, bringing the Arabic language and Islam as the religion. Since then, Libya has been considered an integral part of the Arab world. Libya was a part of the Islamic Empire until the beginning of the 20th century. The Italians tried to occupy the country from 1911 to the end of World War II. In 1943 Britain established protectorates in Triplitania and Cyrenica, and France established one in Fezzan.

On December 24, 1951, Libya was granted its independence, although the province of Fezzan was not included at that time; it was freed from the French later. From that date King Idris Sennoussi headed the Kingdom of Libya until he was overthrown by the military on September 1, 1969. The government was changed from a monarchy to a republic and the authorities of the king and the parliament were replaced with those of the Revolutionary Command Council (RCC).

Education in Libya was in a bad state from the time the Turks ruled the country until independence. "When Libya attained independence there were less than 20

university graduates in the country" (2). Education today is free at all levels, from elementary school through the university. School attendance is compulsory through the preparatory level (ninth grade). Since independence enrollment at all levels has increased significantly.

In 1955 the Faculty of Arts, the first segment of the University of Libya, was established in Benghazi. In 1973 this university was divided into two institutions: the University of Tripoli (later University of El-Fateh) and the University of Benghazi (later University of Garyounis). A good number of students are sent abroad every year for graduate studies, and for undergraduate studies in the few fields which are not offered by either of the universities.

Origins of Libraries in Libya

The strategic geographical position of Libya has made it a bridge linking East Arab countries with West Arab countries, and long before the Islamic period it was the center of some of the outstanding civilizations of ancient times.

In the eastern region the Greeks spread their civilization. After they had built the Pentapolis they established a large public library in the largest one, Cyrene. Its bibliography filled 120 volumes.

During Islamic rule, the center of gravity in cultural life was either to the east or to the west of Libya. This deprived Libya of the opportunity of establishing large libraries, but the country did benefit from those educated people who often crossed its territory in traveling from one end of the Islamic world to the other.

In the middle of the 19th century scientific and literary activities began to make themselves felt, mainly through the Senoussi movement. The biggest library established at that time was at "Jaghboub." It contained about 40,000 volumes, the great majority of which were in manuscript form. A part of this collection was taken by the Italian forces. After the Second World War about 2,100 books were re-collected and deposited to serve as a public library in Benghazi. About 1,000 volumes of the collection are now at the central library of the University of Garyounis.

An antiquities library was founded in Tripoli in 1911. It now has about 20,000 volumes of rare books and manuscripts. Another one was established in Cyrene in 1914. These two libraries maintain books in English, Italian, German, French, and Turkish, besides those in Arabic. Many of them are considered among the world's rarest volumes. All of the books are classified by using letter symbols. The two libraries contain a number of Greek and Latin manuscripts, photographed from different antique tables and inscriptions.

National Libraries

In response to the urgent need for a national library, the Ministry of Education decided in 1964 to build two national libraries: one in the city of Benghazi and one in Tripoli. Construction of the building in Benghazi began a few years later, but

some problems delayed its completion. However, the construction has now been completed and the library is expected to be open for the public shortly.

When the city's present plans are completed the library will be in a strategically central location in a major complex of cultural and government buildings. The library, which is monumentally built, has a rectangular shape, with a small wing attached to it. It is faced with marble in a combination of black, gray, and beige. The main building measures 65 meters (213 feet) long, by 20 meters (66 feet) wide. It is four floors high, except the small wing, which is about two floors high. A good portion of the building is air conditioned and it is provided with a fire protection system.

A well-known American consultant is working with the supervisors of the National Library Projects to provide the library with the most practical and up-to-date furniture and equipment. A feasibility study is expected to be conducted to determine the need for a computer in the library. Initial contacts have been made with the advanced facilities available in the country in this respect.

The capacity of the National Library in Benghazi is expected to be as follows:

Staff	54
Readers' seats	284 (plus 40–50 lounge and cafeteria seats)
Books	360,000–460,000 volumes
Maps	2,000–3,000
Prints and drawings	1,500
Recordings	25,000

It had been planned that the National Library building in Tripoli would be completed in 1978 but later the authorities decided to postpone its construction. It will be several times larger than the building in Benghazi. It has been suggested that the national archives be housed in one of its seven floors. The site is on one of the major streets in the capital of the country, close to a large mosque and some governmental offices. According to the city plans the library will face on an important square.

The two national libraries are to be run by the same administration, and they are planned to complement each other, to avoid unnecessary duplication. The two libraries will fulfill the following objectives:

1. To be responsible for acquiring and conserving copies of all significant publications produced in the country.
2. To enforce the legal deposit law.
3. To produce the national bibliography and carry on other bibliographical activities.
4. To hold and keep up to date a large and representative collection of foreign literature, including books about the country.
5. To act as a national bibliographical center.
6. To be of assistance to all the researchers in the country.
7. To coordinate and plan library service in the Libyan Arab Republic and conduct studies to improve it.
8. To participate in the improvement of the Arab book industry.
9. To participate in editing, publishing, and making use of books on the Arabic heritage.

University Libraries

The institution founded as the University of Benghazi has been renamed the University of Garyounis. Similarly, the original University of Tripoli is now the University of El-Fateh.

UNIVERSITY OF GARYOUNIS

The central library of the University of Garyounis was founded in 1955 with a very small collection of books offered as gifts from several educated people. This collection was about 300 volumes. It has been growing at a fast rate in print and nonprint materials, and it now numbers a little more than 220,000 volumes. In addition the collections include a large number of back issues of scientific periodicals, booklets, and audiovisual materials.

The central library has four main departments: technical services, administration, readers' services, and branch libraries. The library is directed by a chief librarian to whom all staff members report. The total number of staff is 65, 6 of whom are professional, and 19 are subprofessional. Five staff members have been granted scholarships to study library science abroad. However, the recruitment of qualified staff is the most difficult problem the library faces.

The library employs the Dewey Decimal Classification in classifying non-Arabic books. The emended system, which is called the "Arab Decimal System," is used for the Arabic collection. All materials are cataloged according to the Anglo-American Cataloging Rules.

The library subscribes to more than 1,800 periodicals, which cover the needs of all the faculties. The audiovisual division has adequate equipment to show films, slides, and filmstrips, and to listen to tapes and recordings.

The new library building was opened on January 1, 1974. It has a most monumental and beautiful design. It is centrally located and is easily accessible to all faculties. The four-floor library contains about 26,000 square meters of space. It is designed to house 1 million volumes and seats 3,000 readers. The whole building is air conditioned and it has a very good fire prevention system.

The library has a good collection of Libyan material and Arabic manuscripts. It maintains good relations with universities, institutes, and learned societies on an international scale, for book exchange.

There are eight branch libraries in the faculties. Their total collection numbers about 21,950 volumes, most of which are reference and textbooks. This is in addition to 209 periodicals. Acquisition and technical services are handled in the central library.

UNIVERSITY OF EL-FATEH

Library service in this university is provided through the faculty libraries. The first library was established in 1957 when the Faculty of Science was opened. There are now seven faculties in the University of El-Fateh; each has its own library. They

contain about 73,888 volumes, in addition to 1,312 current periodicals. Each faculty has its own audiovisual department with a good collection of nonprint material, especially films and slides in pure science and technology.

In 1972 a decision was made to establish a new central library. Steps were taken to unify the system and centralize technical services and acquisition. The central library is, temporarily, located in a part of the first floor of the Faculty of Science Building. A new library building is being planned, which is expected to be ready before 1980.

The libraries in the University of El-Fateh are manned by 29 staff members. Five of them possess advanced degrees in librarianship and 15 have university degrees in other fields.

Public Libraries

Public library service in the modern sense was introduced in the Libyan Arab Republic in 1953. At that time, the Ministry of Education began establishing public and school libraries on a limited scale.

Public libraries continued to be supervised by the Ministry of Education (later called Ministry of Education and National Guidance) until August 12, 1972. On that date supervision of public libraries was transferred to the Ministry of Information of Culture.

In the mid-1960s the Ministry of Information started establishing "cultural centers." These centers were provided with a collection of books, magazines, and newspapers for use in the centers. They showed movies to the general public and some of them acquired TV sets.

The Division of People's Culture in the Department of Culture, of the Ministry of State, is now in charge of what used to be called "public libraries" and "cultural centers." In 1971, when public libraries and cultural centers were merged under one administration, the two types were given new names; the first were called "people's cultural halls" and the latter were renamed "people's cultural centers."

There are 145 halls and centers located throughout the country. Acquisition and technical services for their material are handled centrally in Tripoli. Books are distributed to the halls and centers through the cultural administration in their district. Their collections range from about 4,000 to about 13,000 volumes.

Special Libraries and Documentation Centers

Some ministries and government departments have small special libraries or documentation centers that maintain material relating to their fields. Among the notable ones are those at the General Organization of Water, the Central Bank, Ministry of Education, General Organization of Industry, Ministry of Planning, Ministry of Oil, and the Research Center for Legislative Studies.

School Libraries

Almost all secondary schools (including vocational training institutes) and many of the preparatory schools have small libraries. They maintain an average of 1,000 books. However, school libraries suffer from lack of trained personnel and proper rooms, and they need better collections.

Other Libraries

There are some libraries that deserve special mention. Among these are the Antiquity Library at the Tripoli Museum, which contains a very rich collection of rare books and historical documents, and the Shahat (Cyrene) Antiquity Library, which has a small but very valuable collection of rare books in various languages.

The picture library is also located in Shahat. It has a valuable collection of slides and photographs, taken of various ruins of ancient cities in the country.

The Tripoli Public Library has a good section on Libya. It is rich in reference books on the country, manuscripts, and rare books. This library is famous for the collection of official bulletins and reports which were written on Libya before World War II.

There is also the Awqaf Library in Tripoli, which has a collection of Turkish and Arabic books pertaining to the history of Libya.

National Bibliography

The Ministry of State has published the *National Bibliography* of the Libyan Arab Republic since 1972. In that year the first volume was issued covering all periodicals from 1866 to 1971. The second volume covered all printed materials published in Libya or by Libyans from 1951 to 1971, including government publications. Since then the bibliography has been published yearly.

The National Library plans to undertake this assignment and to issue the bibliography more frequently. It also plans to publish a retrospective bibliography of Libyan materials printed before 1951.

Library Education

Since the mid-1950s, short library training programs have been conducted irregularly in the cities of Benghazi and Tripoli. They have generally been 4–8 weeks long. They have been beneficial to the school and public librarians, since they are the only source of professional education for these librarians. Qualified librarians who work for the university libraries and some government departments have taught in these courses. These training courses have been organized by one of the follow-

ing: the Ministry of State, the Ministry of Education, the University of Garyounis Library, and the National Institute of Public Administration.

Some librarians have attended short courses in Lebanon or the Arab Republic of Egypt. The highly qualified librarians in the university libraries and in the National Library earned their master's degrees in Library Science in the United States of America. At the present time there are about 12 students working on their M.L.S. in the United States, and about five students working on their bachelor's degrees in Cairo. Fifteen staff members of the National Library are attending long-term training programs in the United Kingdom.

In 1976 the University of El-Fateh established a Department of Library Science attached to the Faculty of Education. It teaches library science at the undergraduate level. It has about 100 students and 8 instructors.

REFERENCES

1. United Nations, Statistical Office of the United Nations, *Statistical Yearbook 1971*, UN, Department of Economic and Social Affairs, New York, 1972, p. 63.
2. Stanford Research Institute, *Area Handbook for Libya*, U.S. Government Printing Office, Washington, D.C., 1969, p. 21.

BIBLIOGRAPHY

Fannoush, Mohammed Omar, "Public Libraries in the Libyan Arab Republic: Description, Analysis of Activities, and a Proposed Plan for Action," unpublished paper presented to the Graduate School of Library and Information Science, University of Texas at Austin, December 1972.

Fannoush, Mohammed Omar, "The National Library: Why? and How?" *Risalat al-Maktabah* [Library Mission], Benghazi, 2(3), 35–37 (June 1975).

Gallal, Ahmed Mohammed, "Historical Survey of Libraries in Libya Up to the Present Time," unpublished report presented to the United Nations Educational, Scientific, and Cultural Organization, August 1972.

Ismail, Abu el-Kasem Ahmed, "Introduction to Central Library, University of Benghazi," *Risalat al-Maktabah* [Library Mission], Benghazi, 2(1), 4–9 (April 1975).

Libyan Arab Republic, Ministry of Information and Culture, Department of Cultural Centers, "Annual Report on the Achievements of the Department of Cultural Centers in 1971," Tripoli, 1972, mimeographed.

Sherief, Abdullah, "University Libraries in the Libyan Arab Republic," paper presented to Conference on Bibliographic Preparation of Arabic Books, Riadh, Saudi Arabia, November–December 1973.

United Nations Educational, Scientific, and Cultural Organization, *Meeting of Experts on the National Planning of Documentation and Library Services in Arab Countries—Cairo 5–12 November 1973, Main Working Document*, UNESCO, Paris, September 14, 1973.

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RESEARCH LIBRARIES

The term research, applied to a library, describes the function of the library more than the source of its support—university, college, or public (municipal) funds—or its size. Special libraries often have research functions, if only in a very limited area of knowledge. While national libraries tend to be research libraries, not all of them are—and many countries have no national libraries. The function of a research library is to collect and make available for use all the material on a given subject or range of subjects. A research library may have a twofold nature, and other functions may be included as a part of the services traditionally found in the second type of library. Thus Harvard University Library, one of the greatest research libraries in the world, is also a typical university library supporting the research of the scholars and, equally, in the Lamont Library, providing for the research needs of the undergraduates. The New York Public Library, another of the greatest research libraries in the world, functions as a reference library for the commercial and industrial community that surrounds it in midtown Manhattan. The Library of Congress has taken on the functions of a national library since the early 1900s, while maintaining its status as a research institution without parallel.

The first of the distinct functions of the research library is to collect in greater depth than any other library. This often is possible not because of the financial resources of the library for the purchase of rare and archival materials, but because of the generosity of private individuals who leave extensive collections to certain libraries, or sell them for much less than their true value. Often the material is of archival importance: the manuscripts of an author and his preliminary drafts and notes for later works, the obscure periodicals and pamphlets of a period or of a subject, the reports of research that were never published at all or, if so, in numbers so limited as to be rare even when they first appeared. University libraries typically have extensive collections of rare materials, especially the dissertations and theses produced at the university. Master's theses, especially, represent original source material and are, at times, of great importance in a particular field. They are, though, under tenuous bibliographic control.

The aim for completeness of a collection has created special problems for the research library, for which special solutions have been found that have ultimately benefited all libraries. Thus the development of microforms, a necessity for a library with an extensive collection of newspapers, has made it possible for a new research library to collect thousands of titles that would otherwise exist in single or few copies. Research libraries have cooperated in the microfilming projects which have given other libraries collections of rare books so that a researcher working in the area of German fiction or Spanish drama or early American literature can find all the material he needs at hand—if not in the form he prefers, at least in a form he can use.

Because of the need to collect everything, research libraries have pioneered in the acquisition techniques that have produced approval plans, whereby all the material published in certain subjects will be sent to a library, which may accept

or reject whichever of the items it wishes. During the time when the United States government made funds available to university libraries, the Richard Abel company had a highly successful approval program. Later, when the funds were no longer so plentiful, the Richard Abel company developed severe handicaps which finally forced its sale to Blackwell of England.

The Library of Congress, under Title II C of the Higher Education Act, became the bibliographic center of the world, collecting all the material useful in research regardless of where it was published or in what language. This greatly aided research libraries, many of which were just expanding into new areas or new languages. The University of Pittsburgh developed its Far Eastern Library during a period of 10 years by collecting rapidly with funds from several government sources and postponing cataloging until time and money could be found for the staff to accomplish the task. Library of Congress catalog cards for books in a wide variety of languages became available to research libraries, although no more than a half dozen sets of a research work in an exotic language could actually be sold.

As funds became scarcer a new kind of librarian, the bibliographer, became an essential staff member. The work of this staff member was to find gaps in the collection and ways of filling them, and also to select from among the material available what was essential in the subject area being developed. Because of the increase of publication worldwide, research libraries found themselves in the usual predicament of having to choose between complete collections and new methods of storage, of having to pioneer in the use of computers for acquisitions and cataloging. Research libraries also pioneered in methods of storing little-used material and in resource sharing, although those libraries without funds or ambitions to develop a research collection were the chief beneficiaries of the pooling of resources.

It is not surprising that research libraries have always exerted an influence over the profession of librarianship and have encouraged the development of the application of information science to the solution of library problems. University libraries are typically research libraries; university libraries constitute the most numerous group of members in the Association of Research Libraries, the "big heads" in the parlance of present-day discussion of library problems. However, the New York Public Library and the Library of Congress are research libraries as well as a public library and a national library, respectively. Since membership in the Association of Research Libraries is dependent upon the actual size of the library collection, special libraries with a limited amount of materials are excluded although the depth of the collection in a given area may satisfy every aspect of the Clapp–Jordan formula. A blending of function with support may be the only solution for a small country that cannot afford competing research institutions. Thus Denmark's national library is in two sections, Science and the Humanities, which also serve as the library of the principal university of the country, the University of Copenhagen. The materials in these libraries are available to all the institutions of higher education in the country and to other institutions in the Scandinavian countries. The system is the model for resource sharing at its most successful.

If resource sharing has been the most recent contribution of research libraries

to the development of librarianship as a profession in acquisition of materials (a procedure with a lengthy history extending back through the Farmington Plan and its predecessors), computerized cataloging will be the next area to be attacked. The reasons for this development can be seen clearly in the success of the MARC II program at the Library of Congress, its influence on the Ohio College Library Center (whose nationwide operations in the United States make the name of the organization fall short of expressing its importance by 30 or more states), and the recent acknowledgment that the dictionary catalog has the severe handicap common to all files: size decreases efficiency. Hence, as the new edition of the *Anglo-American Cataloging Rules* is being discussed, research libraries once again face the dilemmas that led to their part in bringing about the departure of one editor of the *Anglo-American Cataloging Rules* of 1967 and to the distinctions between the North American and the British editions. Interference with the plans of catalogers on the part of research libraries has a history of more than a quarter of a century; it dates back to the preliminary edition of the 1942 rules and the resistance that ultimately prevented further exploration of the principle of providing a rule for every bibliographic problem that might arise. Such a detailed system has been seen to be an impossibility, and the desirability of providing a principle—and then as many rules as are necessary to exemplify it and provide for the most frequent specific applications of it—has been widely accepted as a better approach.

Recataloging, the bugbear of research libraries up to recent times, is now so much less significant that the infamous Rules 98 and 99 of the 1967 edition of the Anglo-American code were dropped without notice or fanfare before the Cataloging Code Revision Committee had completed its work on the new edition (now promised in published form for the last months of 1978). The rules regarding choice and form of entry still exercise the developers of rules, although many have observed that such rules are of no value in a computerized system and should be replaced by rules that define access and provide for authority files to ensure the preservation of the literary units principle in computerized catalogs. What deafens catalogers now is the noise attendant on the closing of card catalogs which are slammed shut as rising costs make maintenance too expensive, let alone revision.

The New York Public Library closed its catalog and started afresh in the early 1970s in order to take advantage of the bibliographic services provided by the Library of Congress. Now the national library itself projects closing its catalog in 1980 and converting entirely to a computerized form at that time. This action is ringed round with so many problems that it will take 3 years just to plan the procedures that will succeed the process instituted with the help of Charles Ammi Cutter in 1898. The marvel is that the card catalog lasted this long with its complexities of filing in many different languages. Research libraries pioneered with divided catalogs, hoping to forestall the day when the card catalog would become like the book catalog in not being the only alphabetical listing where the holdings of a collection could be ascertained. As succeeding methods will probably show, there is no single form of a catalog which will suit all libraries and all functions within a research library. The researcher will have to learn to use several different kinds of catalogs and,

further, will have to endure delays in obtaining some material because it is not immediately accessible. As the size of a collection increases—with infinite expansion the guiding principle of classification and finite space the reality—materials come to be designated as suitable for storage because they are rarely used. Use can be pretty well predicted, so that some research libraries purchase materials for the express purpose of storing them against possible future use, a process that should surprise no one since the library purchases easily stored microfilm collections in preference to the hard copy versions. The collection is no less complete, although the researcher has a much less gratifying method of obtaining the information he requires.

Catalogs in the future will have to be divided according to the availability of the material, with the new item finding its public through printouts circulated to interested persons and recorded for consultation and immediate access in cumulations that could be made available through interaction with the computer or through book catalogs for the month, the quarter, or the year. If the consumption of paper for the printouts exceeded in cost the filing of cards, the card catalog would provide the easiest method of creating a cumulation for a given period of time, preliminary to the publication of a general book catalog of all the material acquired during the period of time when the card catalog functioned. New files would have to be started at regular intervals. As the experiences of the Ohio College Library Center have shown, computer files are subject to the same handicaps as all other files, so that the delays in obtaining the records needed (although measured in seconds) make consulting a computerized file a process much slower than consulting a card catalog, which is slow enough but much more entertaining, or a book catalog. Adequate indexing can make the book catalog the most efficient of all to use, because it is easily consulted without denying access to others for the rest of the file and because it is easily duplicated, a necessity for resource sharing. Entry should be under title except for art prints, and access should be under the name on the title page and under authority file names, as well as under subjects. The computer readout device for public interaction should be limited to the indexing function since the search for the entire record and its display are both time consuming and expensive because of the number of devices required.

The complexities of maintaining catalogs as collections grow and resource sharing proceeds will place heavy burdens on the public services staff of the research library. Of all the areas of development, this has received the least attention, although the reference staff of a large research library has an endless succession of inquiries to answer. As staff members teach users how to employ the equipment that will answer questions about the holdings of the library, the function of reference librarians will be transformed into one similar to that now clearly seen in school libraries. Public services of research libraries have until now been limited to the supply of material from closed stacks, the answering of questions about the procedures for obtaining material, and the investigation of the public's right to use the library. The British Museum's famous round reading room designed by Panizzi is closely guarded so that the privilege of using the area can be obtained only after in-

terrogation by a cultivated staff who turn away all but the most dedicated and impassioned researchers. An idle request to inspect the card catalog will meet, as the present writer can attest, with firm refusal on all sides.

Research libraries have never been very friendly to the public, except as they need financial support. The casual user is turned away wherever possible and restrictions on the age and purposes of the users are meant to ensure that undue wear and tear on the resources, staff, and plant of the library is minimized. Unlike public circulating libraries, definite priorities in the use of the collection are established, so that a certain group—the faculty of a university—will obtain material first and may recall it from other use by another group—the students, who stand lower in the rank of privileges. The depredations of undergraduates on research collections have led to the design of libraries especially for those users whose research interests are minimal. The undergraduates are then forbidden use of the general collection, despite the fact that research interests are not so easily assigned to specific years in a college. A freshman may need such services as interlibrary loan as much as a doctoral candidate, though he may find that the staff of the library takes a dim view of his request. Since the difficulties of using a research library require a better trained and more conciliatory staff, the library may find itself much more appreciated by its largest class of users. Although many books have been written in New York Public's Reference Library on 42nd Street and 5th Avenue, the young men who compiled lists for direct mail advertisers, from the library's collection of telephone books, found the library their source of livelihood as much as did the authors who acclaimed the library and its staff in their publications. Einbinder wrote his critique of the *Encyclopaedia Britannica* by reading the fourteenth edition in the New York Public Library. A library especially for the use of students has been established in that institution in order to reduce congestion within the famous reading rooms located up all those stairs from the lions guarding the entrance.

The significance of the great research libraries has been so little questioned that even in authoritarian countries with absolute censorship their right to collect material has never been questioned. Even the National Library of Korea in Seoul, when it was established in 1923, could collect material in the Korean language which was generally forbidden to every other institution by the Japanese occupiers of the country. During the Second World War, when the secret police operated without restraint, the library continued to collect all the material it could obtain and users with research interests would defy the *Kempetai* to utilize the collection. They might be subjected to harrassment but the library was not pillaged or restricted. Even Adolf Hitler permitted German research libraries to collect as they chose, although books by Jews and communists were removed from the kiosk libraries and burned.

In Great Britain and the United States, research libraries have collected material that was banned elsewhere. Columbia University kept its copies of the original edition of Edmund Wilson's *Memoirs of Hecate County* despite the fact that bookstores in New York City could not sell the book. The Library of Congress collected

material that was forbidden in the United States, as did the New York Public Library, so that complete editions of the works of the Marquis de Sade and the publications of the Olympia Press in Paris can be found listed in the National Union Catalog, although the laws of the time would seem to make such listing an "advertisement" so far as the courts were concerned.

Restrictions have always been placed on users and the kind of material they could use, ranging from preventing use of the entire library as in Great Britain, to restricting the use of certain collections to "serious researchers." Apparently one with a sense of humor would be shown the door. This has led to many trials and complaints on the part of users who show up with a list of credentials hoping to have access to a library. Some private university libraries permit use of their facilities on the payment of a special library fee. Research libraries have never made any pretense of being free libraries, like public libraries, unless they are in fact public libraries. One of the more pleasant aspects of resource sharing has been the opening of the libraries of the colleges and universities of a city to the students of the institutions, a privilege that faculty members enjoyed much earlier.

This article is not meant to supply a detailed study of the common features of research libraries but only an overview that can be continued by consulting entries throughout for the great research libraries of the world, which are either included as separate articles or are dealt with at length in articles about libraries in certain countries.

The public libraries in the largest cities in the United States have tended to be research libraries, following the pattern of the New York Public Library with its many branch research libraries. University libraries throughout the world have followed the pattern of the libraries of Oxford and Cambridge in creating great research institutions, and national libraries, where they exist, tend to be repositories of complete collections about the country and of material published in the country.

A good resource for an interpretation of the research library is the planning and development process for the national library of Iran, the Pahlavi Library, which has begun its second phase after the determination of the program and objectives of the library by an international panel of experts. The next century should see the increase of research libraries throughout the world since the increase of available information tends to augment the use of such material as well. In periods when there has been little or no research, libraries have collected as well as they were able, but both collection and use were commensurately small. Research libraries create their own problems by encouraging the reporting of research which they make possible, hence the parabolic increase in the size of holdings seen by such frequently quoted authors as Fremont Rider. As collections grow in number of titles they tend to decrease in the ratio of titles to cubic space occupied by the material. As the files increase in size, ways are found to make the acquisition and cataloging faster and less costly on a unit basis.

There is good reason to state that the most important influence of research libraries is in finding means to get more and more into smaller and smaller areas, and means to catalog it faster and faster, thereby enabling the library to become

bigger and bigger in the sense of information sources without actually increasing in size as an institution or in the number of librarians. The plans for the Pahlavi Library of Iran show exactly how the library will acquire a monumental collection, organize it quickly, and provide extensive services to the public. The history of almost any research library has already established this pattern, leaving to other libraries a wide area of service which does not depend on having everything available but consists only of providing all the most needed services for a community.

JAY E. DAILY

RESEARCH METHODS

Research is any systematic quest for knowledge that is characterized by disciplined inquiry. In the process of conducting research, an investigator is concerned with three major activities: (1) the definition of terms, (2) the posing of questions or stating of propositions which incorporate the defined terms in an explanatory fashion, and (3) the testing of propositions or the search for answers to exploratory questions. Within the scope of these activities, the adept research worker specifies objectives, explains problems with conceptual clarity, imposes structure on the inquiry by relating the research problem to relevant theories, and selects appropriate methods for observing conditions or events and for measuring properties so that interpretations can be made.

The search for solutions to both practical and theoretical problems in all subject fields has been aided by carefully conducted research. Increasingly, members of the profession of librarianship are recognizing the benefits of the inquiry process and the usefulness of appropriate investigative methods for the study of those issues and problems with which librarians and information scientists are qualified to grapple. Distinguishing criteria of any profession—including librarianship—incorporate the ability of its members to develop a structure of theoretical and practical knowledge, to generate and to test hypotheses relevant to pertinent variables or theories, and to conduct both basic and applied research utilizing effective methods of inquiry.

Research in Librarianship

Librarianship does not have a long tradition of research scholarship. Not until the 1930s did a substantial number of members of the profession begin to fully recognize the value of conducting careful studies pertaining to various library phenomena. Between 1930 and 1946, the first 50 doctoral degrees in library science were awarded to persons with research orientations, at the University of Chicago. Many of the early systematic inquiries by these scholars and other per-

sons in the field were primarily descriptive in nature. Since World War II, a number of developments have stimulated the conduct of various other kinds of research in library and information science in the United States. In recent decades, library collections have grown steadily, the ranks of librarians and information specialists have swollen, and the scale of library and information activity has expanded tremendously. Another contributing factor to increased research activity has been the availability of financial support for some research efforts in library and information science. Furthermore, the founding and growth of doctoral programs in library schools has stimulated research efforts. The profession has also been forced by rapid and innovative changes in technology to place more emphasis on research so that library and information science can keep pace with the complexities of the modern world.

In addition to purely historical or descriptive studies, librarians have conducted other kinds of inquiries, including survey research and experimental research. In recent years, librarians have also adapted operations research techniques in their efforts to quantitatively analyze library problems as a basis for decision making. While these and many other inquiries in the field have been designed to solve immediate problems and could be classified as *applied research*, some inquiries have been more theoretical in nature. A few studies have been identified as *basic research* because they were not directed toward practical applications of knowledge but toward the achievement of a fuller understanding of librarianship. The distinction between applied and basic research in library and information science has not always been clear, however. The profession is still in the process of developing a body of theory and of identifying all the factors, or variables, with which it should be concerned.

Systematic inquiries have touched upon many aspects of modern librarianship, including the following: (1) management, collection development, personnel administration, public services, and technical services in academic, public, school, and special libraries; (2) histories of individual libraries, books and printing, education for librarianship, and various periods of library development; (3) utilization of a variety of communication media and technologies in libraries; (4) acquisition of books, periodicals, and other print and nonprint communication media by libraries; (5) cataloging, classification, indexing, filing, storage, and retrieval of information; (6) use of information systems, documentation, automation, and data processing in libraries and information centers; and (7) use and nonuse of library and information services by persons that libraries are designed to serve. Despite all this research activity, opportunities are still abundant for the application of modern research techniques to many facets of library and information science. The general need for the replication of inquiries and the verification of knowledge previously produced has also been recognized.

As new disciplines and subject fields have developed, the interrelationship of library and information science to other areas of knowledge and to new information and communication technologies has become more apparent. Increasingly, research activities within library and information science are interfacing with sub-

ject areas such as audiovisual technology, microform technology, computer science, communications, and instructional technology. In addition, changes within modern librarianship appear to be weakening the traditional delineation of librarianship into the major subareas of academic, public, school, and special libraries. While these subareas are useful categories for describing types of library clientele or institutions, the commonalities of basic principles, techniques, and theories of all libraries are recognized as research activities increase in scope and in quantity. Ultimately, all these developments appear to enhance the potential for research workers in library and information science to conceptualize processes more accurately, to express new theories and practices, and to develop new intellectual formulations.

Research in library and information science is not limited to the classification of observations or to the description of library and information phenomena. While these kinds of inquiries provide answers to *what* questions (i.e., What is a library? What is information? What is reference service?), they do not answer *why* questions about some phenomena that have already been recognized and variously described. Descriptive studies do not provide explanations of library phenomena in terms of their relation to supporting or conditioning factors or circumstances. Furthermore, descriptive research does not allow explanations of the utility of all phenomena in terms of their consequences for users of libraries and information in a variety of service settings. Although some aspects of the collection, classification, indexing, storage, retrieval, and utilization of information can be analyzed in terms of historical developments, other related phenomena must be explained in a correlative sense in terms of associated factors or conditions—or in relation to their effects on persons or societies making use of libraries and recorded information. In the past several decades, investigators in library and information science—equipped with new hardware and scientific research techniques adapted primarily from other fields—have conducted some insightful inquiries about a variety of relatively unexplored library and information phenomena.

Scientific Methods and Research

Science is both an organized body of knowledge and a method of modifying and extending what is known by means of careful research. Scientific methods of inquiry are generally regarded as the most productive avenues to the creation of verified knowledge. The ultimate goal of science—unmindful of disciplines or subject fields—is the accumulation of complete, verified knowledge bearing upon nature and the physical world, and also an understanding of that knowledge. *Observation*, *measurement*, and *quantification* are fundamental elements of scientifically conducted inquiries. Scientists reject premature explanations, and they are characterized by an ability to wait patiently for more information. In addition, scientists depend heavily upon verified data; they also place a high value on honesty. Thus, scientists do not reject the unexpected, as, for example, when data gathered in the

course of a systematic inquiry conflict with favored theories or hypotheses related to research efforts.

In addition to its foundation in observation, the scientific approach is based upon clear thinking and careful inquiry. Science is generally viewed as a progressive development of conceptual schemes that have been painstakingly tested. The goals of science include the prediction, control, and interpretation of events. Implicit in the objectives of science is the idea that verification of knowledge can be accomplished most effectively with sound research methods, especially carefully conducted experiments.

Most laymen seek knowledge in a variety of ways, including some methods that are not scientific. On the other hand, adept investigators acquire knowledge in a scientific manner. By asking questions, thinking of possible answers, and testing hypotheses, research workers can produce knowledge that is more certain. Observation and experimentation are important aspects of scientific inquiries; scientists attempt to make these methods as exact as possible. As the measurement of phenomena is important in science, careful investigators attempt to improve the precision of their measuring instruments. When phenomena cannot be adequately observed and measured in naturalistic settings, scientists often depend upon experimentation, whereby changes in phenomena are observed and recorded as various variables are manipulated under controlled conditions.

As a result of reliance upon scientific methods of inquiry, competent investigators in library and information science tend to make their research more rigorous and productive. The scientific approach provides numerous benefits to the profession, including the following: an increase in the store of relevant knowledge; the development of a body of theory for increased utilization and accuracy of library and information practices; allowance for the testing of theories, assumptions, and hypotheses on a regular basis; development of new methods to quantify important qualities so that improved measurements can be made; transformation of library and information practices into theories in a systematic manner; stimulation of the application of research findings to practices and procedures; an aid to library and information scientists in remaining abreast of the latest and best equipment, methods, and innovations; facilitation of the improvement of quantification methods so that the precision and sophistication of statistical techniques are enhanced; promotion of the development and use of a consistent, objective, and technical vocabulary; and an emphasis on the exercise of impartiality and detachment in investigations in which truth is used as the most important criterion of judgment.

The scientific approach to inquiry is comprised of methods that are sometimes used in library and information science to produce new knowledge related to various facets of the profession. Scientific research requires a logical approach comprised of several interdependent activities, the essentials of which are the following: (1) description of the problem and a critical review of relevant research reports and literature; (2) mustering of previously produced facts by collecting pertinent information about the problem or topic; (3) careful study of available evidence so

that the research problem can be refined, specific hypotheses or exploratory questions can be posed, and solutions can be anticipated; (4) structuring and conduct of experiments or other careful studies to test the most feasible hypothesis in relation to the most crucial questions; (5) analysis and evaluation of accumulated data and the drawing of relevant conclusions; (6) utilization of research findings to predict effects so that new hypotheses can be generated; and (7) recording of methods, findings, and conclusions in a written research report so that newly acquired insights and knowledge can be communicated to other persons.

Rigorous methods of scientific inquiry are used to solve problems of significance. While less exacting exploratory techniques can aid investigators in delineating the general nature of a problem, more productive and definitive studies can be conducted to find solutions to problems or to answer specific research questions. The methods of scientific inquiry can be used to predict the degree of success that a process will meet, as well as those modifications or solutions which appear to be most satisfactory. Research methods can be classified into three broad categories: experimental, survey, and historical (descriptive). Each of these categories of research is discussed separately in the following sections.

Experimental Research Methods

An *experiment* is a research process used to establish some truth, principle, or effect. It differs from other investigative methods in that the observed phenomena are controlled to varying degrees by the investigator. Most experiments are conducted under known conditions; attempts are made by experimenters to eliminate as many extraneous factors as possible. A number of experimental procedures can be used by investigators; no single design could be characterized as the best for all inquiries. In selecting particular experimental techniques, competent investigators remain aware that conceptual requirements of the research hypothesis must be met by controlled experimental conditions. In addition, the experimental design selected for an inquiry should be reproducible. In the classical experiment, subjects or objects of a study are randomly assigned to one of two groups: an *experimental (test) group* and a *control group*. Each subject is given an equal chance of being assigned to the two groups. Both groups are treated similarly with the exception of the application of the key treatment to the experimental (test) group alone. The treatment given to the experimental group entails the manipulation of one or more variables by the investigator. Factors that are manipulated by the experimenter are called *independent variables*. When independent variables are varied, the experimenter observes other variables to measure the degree to which the variables are related to changes in the independent variables. These observed factors, measured after the independent variable has been manipulated, are known as *dependent variables*. The classical experiment has been schematically diagramed in Figure 1.

In a *field experiment*, the investigator observes a phenomenon in a natural setting and, at the same time, manipulates one or more variables. Care is taken in field ex-

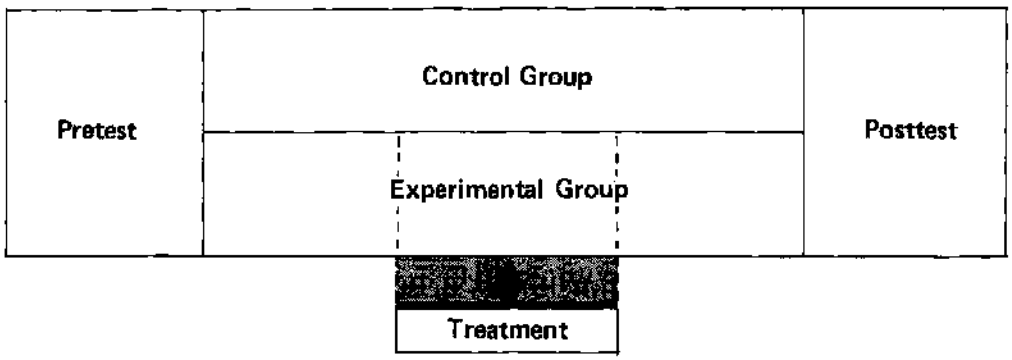

FIGURE 1. *The classical experiment.*

periments to avoid unnecessary disruptions of the natural conditions being observed. When an investigator goes beyond the field experiment and attempts to construct a particular setting or a set of circumstances that typifies a naturally occurring phenomenon, the research design could be described as an *experimental simulation.* The electronic computer has been found to be a powerful tool for such simulations. A *laboratory experiment* is a study conducted under highly controlled conditions. The term "laboratory" is used as an indication that an experiment is not conducted in a naturalistic setting but in some other convenient place. When conducting laboratory experiments, the investigator usually attempts to create prototypes of events, situations, or processes apart from the naturalistic circumstances in which they occur. Because the settings for most laboratory experiments are artificial or contrived, the investigator must ensure that the research design has a high degree of internal validity. Contrived conditions should be very close approximations of real situations found in natural settings, and the effects obtained should actually be associated with the manipulation of identifiable variables, rather than with extraneous factors.

The experimental method is one of the most useful and powerful techniques for identifying causal relationships between variables. While experiments in library and information science are conducted to test specific hypotheses, the experimental method is also used advantageously in exploring other kinds of research problems. Experiments can be performed to test new techniques for acquiring, classifying, storing, and retrieving information, or to test new library or information services. A previously unobserved or ill-defined library or information phenomenon can often be identified with experimental methods. Furthermore, experiments allow investigators in library and information science to explore conditions under which a phenomenon occurs. Other experiments might be conducted merely to satisfy curiosity about certain library or information phenomena.

The selection of homogeneous groups of subjects (or objects) and the random assignment of these subjects to control and experimental groups will reduce the probability that the results of an experiment will be due to conditions other than those associated with the manipulation of the independent variable(s). In addition

to the random assignment of subjects to control and experimental groups, the experimenter usually conducts a pretest prior to the subjection of the experimental group to the treatment. The pretest reveals whether an inherent difference exists between subjects in the two groups with respect to the dependent variable. If no significant difference is uncovered by the pretest, the experimenter proceeds to manipulate the independent variable(s)—that is, to impose the treatment on the test group. When two or more different treatments are varied independently, the inquiry is called a *factorial experiment*. If the treatments are effective only in combination, the interaction in the experiment is referred to as *catalytic*; however, if these treatments are effective singularly and not in combination, the interaction is called *antagonistic*.

After the experimental group has been subjected to some kind of treatment and the control group has been left constant, a posttest is conducted to measure the effect of the treatment, if any, on the test group. In other words, the experimenter attempts to measure changes in the dependent variable by ascertaining whether the control group and the experimental group differ after the treatment has been applied to the latter group. As two groups rarely perform exactly alike, some degree of variance is likely to be found under any circumstances; however, the experimenter's task is to determine whether the difference between the control and the experimental group is significant. Repeated measurements of the same phenomenon will almost always vary somewhat; however, more accurate instruments of measurement will decrease variance from one case to another. When the dependent variables relevant to the control and experimental groups have been measured as accurately as possible, statistical tests can be employed to determine whether experimental results are due to chance or whether there is indeed a difference between measures for the two groups. Generally, hypotheses are tested at the 0.05 level of significance ($p < 0.05$). Thus, a difference is often deemed significant if there is a likelihood that it was not a chance finding in 95 cases out of a possible 100. If the statistical test fails to reach the selected level of significance (i.e., $p < 0.05$, $p < 0.01$, $p < 0.001$, etc.), the null hypothesis cannot be rejected. For the purpose of conducting statistical tests, research propositions are often stated negatively, as null hypotheses. Numerical precision can be more readily obtained in testing null hypotheses than in testing positive ones. Null hypotheses are based upon the rule of negative inference in logic.

The analysis-of-variance technique is often used to determine different sources of variation measured in the course of experiments. Chi-square tests are frequently performed to test hypotheses when the collected data are nonparametric. A statistical test of significance can aid the investigator to make inferences from samples and apply them to populations. Investigators assume that the observed characteristics of a sample will reflect the unobserved characteristics of the population from which the sample was randomly chosen. The value of decisions made as a result of statistical analysis depends upon the actual relationship existing between analyzed data and the circumstances to which the data will be applied in the form of research findings or conclusions. Experimental findings are evaluated in terms of

the scientific importance of the data, the reliability of the data, and the degree to which the data can be generalized to other situations.

Survey Research Methods

Although library and community surveys are often conducted by librarians, many of these efforts to collect contemporary information could be characterized as status surveys because they are designed to assay library and community conditions, rather than to test specific hypotheses. *Survey research*, on the other hand, is distinguished by its reliance upon the selection of persons (or objects) from large and small populations and the making of observations so that inferences can be applied to parent populations. A *population* is any group of persons, objects, institutions, or other units that possess at least one common characteristic. The following are a few examples of populations: (1) all directors of special libraries in the United States, (2) all recipients of graduate degrees in library science, (3) all bibliographers in an academic library who hold advanced degrees in the subject areas in which they work (i.e., anthropology, biology, political science, etc.), and (4) all books contained in the collection of the Boston Public Library.

Survey research methods enable investigators to gather needed research data without having to conduct complete enumerations of populations. Surveys can save time and money without sacrificing efficiency, accuracy, or information adequacy. Many of the techniques employed by surveyors are field methods, which include face-to-face or telephone interviews with respondents, mail questionnaires, and direct or unobtrusive observations of various phenomena. In contrast to the methods of status surveys, the more exacting and penetrating techniques of survey research are designed to collect information for use in testing hypotheses, finding solutions to specific problems, or providing answers to exploratory research questions.

The techniques of survey research can be used effectively within librarianship to procure a variety of *contemporary* data, including information about events and conditions in and among libraries; about the attitudes, opinions, and actions of library users and librarians toward a variety of issues; about developments in, and accomplishments of, library associations and other professional library organizations; and about many other matters related to library and information science. Highly developed sampling procedures are used to select samples that provide research data with small probable errors. Samples selected in surveys are generally *random* and *representative*: each member of the population has an equal chance of being chosen, and the sample is matched with characteristics (variables) of the population that are deemed to be important in a particular inquiry. Most samples need not be very large; the accuracy of survey data is not a function merely of sample size.

Suppose that a state library agency is attempting to determine the attitudes of public library directors in a given state toward federal aid to libraries. A scale is carefully developed to measure attitudes in the form of scores that extend along

a continuum from favorable to unfavorable. Because the population of public library directors totals 300 persons, investigators decide that it is not feasible to survey all members of the population. Instead, a random sample of 30 directors is selected, and the attitude scale (test) is administered to all persons chosen to represent the target population. The mean attitude score of librarians comprising the sample would be the best estimate of the population mean available from the sample.

A sample which resembles the pertinent characteristics of its parent population is said to be representative. Thus, the degree of *heterogeneity*, or dissimilarity, inherent in a population can be used as a guide to determine the nature and size of a sample. When a population is comprised of a variety of kinds of members or objects (that is, when the population is heterogeneous), the greater will be the *variability* among several samples selected from that population, all other things being equal. For example, a population of 1,000 librarians comprised of a mixture of persons employed in all types of libraries (academic, public, school, and special) could be characterized as possessing variability. Should the types of librarians be equally distributed in the population, various samples drawn from the population could also be expected to have variability. However, should the population be comprised primarily of public librarians, with small representations from the other three categories of libraries, samples drawn from this more *homogeneous* group could be expected to be more constant.

Stratification and random selection techniques can be used to decrease variability among different sets of population members. When the surveyor wants to ensure that all homogeneous groups are properly represented in a sample, the sampling technique can be refined. *Stratification* is a refinement of the sampling process whereby the population is divided into strata that are homogeneous. In addition, the sampling concept of *randomness* can be used. When random samples are selected, each member or item in the population is given an equal chance of being chosen. While some circumstances preclude the selection of random samples (i.e., when the object of an inquiry is to locate specific individuals or cases, or when only certain data are available), surveyors cannot *generalize* data (make inferences) from nonrandom samples. Research data must originate from randomly selected subjects when investigators plan to make inferences regarding parent populations.

The refinement of sampling techniques so that all homogeneous groups are represented can allow investigators to reduce sample size. For example, the *universe* (population) can be categorized according to *strata*, or subunits, and simple random samples can be selected from each stratum. To enhance representativeness, the members selected from each stratum are chosen in proportion to their actual distribution within the population. Stratification is unnecessary when there is insufficient reason to anticipate appreciable degrees of variation among or between respondents (such as between males and females, college and university librarians, etc.). The selection of samples often hinges upon a statistical probability model designed to allow the identification of tolerable errors and confidence limits. Furthermore, factors such as the accessibility of respondents, the nature of the study,

time constraints, and available financial support may govern sampling procedures.

Competent investigators plan and prepare carefully for the conduct of effective survey research projects. Hypotheses or exploratory questions are identified explicitly, along with the nature and extent of the population to be surveyed. Moreover, the type and size of the sample is determined, and procedures or instruments such as interviews and questionnaires are devised so that relevant information can be collected. Data-gathering instruments are also carefully designed, precoded, and pretested. Finally, logistical matters are planned, including procedures for the distribution of instruments or for interview sessions, for the scoring of instruments by assistants, and for the processing of research data. For some surveys—particularly those with sponsorships—estimates of costs must also be determined and reported.

One of the most commonly used data-gathering instruments in survey research is the *mail questionnaire*. Once this instrument has been properly designed and carefully pretested, it is usually duplicated in one form or another or printed and mailed to respondents who have been randomly selected from a *frame*, which is a directory, roster, or other list of members of the target population. Mail questionnaires have both advantages and disadvantages, all of which ought to be weighed carefully by surveyors. Questionnaires allow a greater range and distribution of the sample, providing an opportunity for respondents to give frank, anonymous answers to questions posed. Greater economy of effort and the potential to collect larger amounts of data are offered by the mail questionnaire in comparison to face-to-face interviews with respondents. In addition, the preparation of a written instrument often requires the careful conceptualization and planning of survey research—and of the data-gathering instrument itself. Because of their fixed forms, questionnaires can be more stable research tools or instruments than interviews. On the other hand, weaknesses of questionnaires should not be overlooked. A written instrument distributed through the mail can decrease or preclude personal contact between respondents and research workers. These instruments do not provide an opportunity for some investigators to adequately explain questions or for respondents to qualify unclear items. Nonresponse bias might also result in mail surveys having low return rates. Furthermore, verification of questionnaire data is often difficult, and a printed instrument might not provide an opportunity to adequately measure relationships between various independent variables and respondents' actions, opinions, or attitudes (dependent variables).

Questions prepared for mail surveys can be classed into two broad categories: structured and unstructured. *Structured questions* are multiple-choice items, or they may have some other form of guided responses. The "best" or "most appropriate" response is chosen by respondents, depending upon personal judgments. The following item is an example of a structured question:

> If your library was forced to close for a period of one month because of an acute fuel shortage, how much would you miss the library?
>
> a. a very great deal
> b. quite a lot

c. not very much
d. not at all
e. uncertain

Unstructured questions do not have fixed-alternative responses but are open-ended. Thus, instead of being asked to select one of several provided responses, survey participants can reply freely to questions. The following is an example of an unstructured question:

> In your opinion, what are the benefits of membership in the American Library Association?

In contrast to the responses to unstructured questions, replies to structured questions are usually easier to characterize and to analyze. However, structured questions can force persons to select a response that does not accurately represent true personal views or feelings. Thus, surveyors take care to ensure that structured questions are followed by a sufficient number of fixed responses that reflect the spectrum of attitudes, beliefs, opinions, or views surrounding the topic being scrutinized. Structured questions should be provided with fixed responses that range from the most positive to the most negative statement, also often including a neutral position such as "don't know" or "undecided." When fixed responses are used, they are frequently precoded or scaled. This is accomplished by assigning appropriate numerical weights to each response choice. Values assigned to fixed responses are based upon the judgments of experts, upon established principles, or upon prior knowledge and research. Precoding of fixed responses facilitates scoring of returned questionnaires and allows the research worker to differentiate among the varying intensities and degrees of respondents' views. The following item is an example of a survey question with guided and scaled responses:

> How much does the *Library Quarterly* contribute to your awareness of research activities within the profession?
>
> a. a very great deal (weight = 4)
> b. quite a lot (weight = 3)
> c. not very much (weight = 2)
> d. not at all (weight = 1)
> e. uncertain (weight = 0)

Although mail questionnaires are often used in survey research, some surveyors claim that verbal, face-to-face questions and answers allow the collection of more complete research data from respondents. If respondents are widely dispersed or if they are relatively inaccessible to the interviewer, the investigator can resort to mail questionnaires. When time and resources are available (especially persons qualified to conduct interviews), the interview approach to obtaining survey data is recommended. Qualified interviewers are often able to elicit valuable, original evidence, both from what persons say and what they do not say. As interviews are often unpredictable events, surveyors must plan carefully so that they are well prepared for interrogative tasks. Most successful interviews are conducted in an informal

and friendly climate. Successful interviews are more likely to be conducted when both the interviewer and the interviewee are at ease. Each respondent should be approached as an individual and should be asked to answer only one question at a time, rather than several subquestions combined into a complex query. Interviewers should not attempt to put words into respondents' mouths. Neither should they show shock, disbelief, or dismay in relation to replies of respondents. Comments must be recorded objectively so that the data will accurately reflect the interviewee's feelings or viewpoints. Competent interviewers are keenly aware that their task is to elicit and to record the actual replies of respondents; the purpose of interviews is to obtain the replies of persons who agree to participate in a survey—not those of the interviewer.

Historical Research Methods

Historical research in librarianship entails a systematic enumeration of past events relevant to all facets of the profession—its goals, guiding principles, and objectives; its institutions; its resources; its methods and procedures; and its personnel. The term *library history* is generally applied to accounts of past events that have affected libraries and to the effects of libraries on users and on society in general. While many historical research projects in the field have dealt with narrative accounts of individual libraries as institutions, some have been devoted to types of libraries—academic, public, special, or school. Included within the category of library history are biographies and autobiographies of librarians or other persons who affected the growth or development of libraries and librarianship. Library history is sometimes approached from the viewpoint of the effect of past incidents and developments on later times. Historical analyses made by librarians are often accomplished with attention to the importance or significance of events—their common relations and their antecedents and consequences.

The value of historical research in librarianship has been discussed at length by scholars such as Jesse Shera, Pierce Butler, Haynes McMullen, Louis Shores, and Michael Harris. In *An Introduction to Library Science*, Pierce Butler noted that an appreciation of modern librarianship is possible only through knowledge of its historical backgrounds. Furthermore, Jesse Shera underscored the idea that a "clear historical consciousness" on the part of librarians would aid them in effectively fulfilling their social responsibility. A number of seminal historical studies have been produced by library historians. Among these are the following: Kenneth J. Brough's *Scholar's Workshop: Evolving Conceptions of Library Service* (Univ. of Illinois Press, 1953); Jesse H. Shera's *Foundations of the Public Library Movement in New England from 1629–1855* (Univ. of Chicago Press, 1959); Walter M. Whitehill's *Boston Public Library: A Centennial History* (Harvard Univ. Press, 1956); and William Williamson's *William Frederick Poole and the Modern Library Movement* (Columbia Univ. Press, 1963).

Because historians are concerned about how, why, and when past events actually

occurred, these investigators rely primarily upon observations made in the past by other persons and upon whatever evidence remains that can be examined closely. As most librarians are familiar with the techniques of bibliographic searches and are armed with a working knowledge of how and where to locate a variety of historical data, they are in a favorable position to conduct historical research, especially studies about libraries and librarianship. Much of the information used by historians is obtained from *primary sources*, which are records containing original evidence or eyewitness accounts of past events. These sources might be official in nature (i.e., local, state, or federal government documents), or they might consist of personal, unofficial documents of value as evidence. Primary sources include manuscripts such as personal letters, memoirs, and other private papers; oral history interviews with persons who played a role in or observed a past event; archival materials; some government documents; photographs; and physical remains. *Secondary sources* do not contain original historical information; they are records about events that were prepared by persons other than eyewitnesses. Most secondary sources consist of published materials in books, magazines, and newspapers. In spite of the distinction frequently made between primary and secondary sources of information, these resources are not intrinsically "primary" or "secondary." The relationship between the source and the topic being investigated is taken into consideration in classifying the nature of historical materials. A particular source may be primary for one inquiry, yet secondary for another.

Careful historians evaluate the trustworthiness and accuracy of their sources of information by subjecting documents or records to both external and internal criticism. *External criticism* is an attempt to determine the authenticity of materials—whether they are genuine and where, when, why, and by whom the records were prepared. *Internal criticism* is an attempt to judge whether the *contents* of historical records are factual (that is, to ensure that information has not been deliberately falsified or distorted).

Note-taking is an activity that requires considerable attention and planning in historical inquiries. One of the most effective systems of note-taking uses two sets of 3-by-5-inch cards—one set for recording the full bibliographic details about each source of information used and the other set for notes that contain the collected data. The following information should be recorded on bibliographical cards for books used as sources of information: full name(s) of author(s), title of the book, place of publication, publisher, year of publication, and the library call number. Bibliographical cards for periodical articles should contain the following information: full name(s) of author(s), title of article, complete title of the periodical or journal, volume number, month (or season) and year of publication, and page numbers of the article. Complete and accurate recording of these data by the historian can eliminate repeated trips to the library or to the source—wherever it might be located—for the purpose of verifying various bibliographic details and other essential information.

When information is taken directly from printed sources, historians take care to record all useful facts and quotations completely and legibly so that misrepresenta-

tions are avoided. The investigator should also devise a system for this activity so that questions will not arise about selected quotations as distinguished from the opinions or ideas of the note-taker. When recording the words of other persons or parts of the texts of printed sources of information, quotation marks should be placed around the borrowed materials. Furthermore, facts and other information—particularly data that are of an obscure nature—should be recorded carefully with complete documentation so that accurate footnotes can be provided in finished historical research reports.

Once sufficient historical evidence has been located, classified, and evaluated according to the purpose of an inquiry, the historian selects and analyzes the most appropriate and relevant information for the testing of hypotheses. A narrative account of conclusions is then prepared, care being taken to ensure that decisions are based upon the collected evidence. The process of preparing historical narrative reports requires imagination, discrimination, and sophistication on the part of writers. Conclusions presented in historical narratives should be rooted in an objective analysis of evidence. In addition, narratives ought to be written in a lucid, unambiguous, and interesting manner. Critics of research will judge the quality of histories primarily on the basis of whether the information and conclusions are presented objectively and are based on documented evidence.

Analysis of Quantified Data

Statistical methods are indispensable tools used to impose meanings on masses of quantified research data. Any treatment of numerical data that is designed to merely summarize or to describe outstanding features of observations could be classified as *descriptive statistics*. Such methods include measures of central tendency (mean, median, and mode); measures of dispersion and variability (range, standard deviation, quartile deviation, and mean deviation); centile points or percentiles; standard scores; normal curve techniques; and correlational methods such as product-moment, biserial, point-biserial, phi, and tetrochoric. *Analytical statistics*—sometimes also referred to as sampling or inferential statistics—can be used to further analyze research data. When information is generated from the observation of only a few units (samples) of a larger population, statistical inference can be used. Analytical statistics is often applied in sample surveys and in the design and analysis of experiments. These procedures include the following: techniques for comparing means and proportions (significance of the difference between means of independent, matched, or paired groups and the significance of the difference between observed means and established norms); the chi-square technique for testing hypotheses, for tests of independence, and for tests of "goodness of fit"; and analysis-of-variance methods.

Paired groups of similar subjects are used in many research projects in which one group of persons (or objects) is subjected to a particular type of treatment and a paired group to a different treatment (or to no treatment at all). After the treat-

ment has been applied, both groups are tested, and the means of quantified observations obtained from each group are compared to determine the statistical significance of the difference. Normally, a null hypothesis is posed and tested with an appropriate statistical method. The null hypothesis is a statement that the true difference between the means of two sets of observations is zero. When two groups of quantified observations are compared statistically, the use of the 0.05 level of probability will show whether there are only 5 chances in 100 that the difference between the two sets of data could have arisen by chance sampling. Selection of the 0.01 level of probability will allow an investigator to determine whether there is only 1 chance in 100 that the difference between the observations could have arisen by chance sampling. When the investigator would like to be even more certain about the accuracy of inferences to be made from samples to populations, selection of the 0.001 level of probability will allow the testing of hypotheses so that there is only 1 chance in 1,000 that the difference between two sets of observations could have arisen by chance sampling.

Quantitative observations obtained during experiments or other types of research projects are often grouped and displayed in *frequency distributions*, which are tabulations of quantified observations. When placed in frequency distributions, data are often grouped into class intervals, and the number of occurrences of each datum is recorded in a separate column. Frequency distributions serve as aids to research workers in performing visual analysis of their data and in the application of various statistical tests.

To illustrate the use of selected statistical procedures, some examples of the analysis of quantified research data are provided in this section. All examples are based upon hypothetical data for various research problems in library science. The data used in examples are manageable for the illustration of computational procedures within the confines of this article; however, readers should be aware that research data are normally more extensive in scope. In addition, readers should also be aware that computers are being used increasingly to perform many of the computational procedures that are carried out mechanically here. Despite the development of faster and more efficient techniques for data analysis, a familiarity with the fundamentals of statistical procedures and the relevant mathematical computations is a prerequisite to proper utilization of various computer programs for automatic computation. Readers are also reminded that the use of statistical methods for the analysis of research data does not correct or salvage poorly designed inquiries. When data are obtained carelessly or uncritically, no amount of statistical manipulation can render a study more valid or reliable.

EXAMPLE 1

Circulation statistics for 135 randomly selected books are recorded for a 3-year period in Table 1. The grouped frequency distribution consists of 15 class intervals, beginning at the bottom of the table with the interval 1–4 (into which the shortest circulation periods fall) and ascending to the interval 57–60 (into which the

TABLE 1

Circulation of 135 Books During a 3-Year Period

Number of days	Frequency (f)	Cumulative frequency (cf)	Cumulative percentage (cp)
57–60	2	135	100
53–56	2	133	99
49–52	3	131	97
45–48	4	128	95
41–44	8	124	92
37–40	15	116	86
33–36	19	101	75
29–32	20	82	61
25–28	16	62	46
21–24	11	46	34
17–20	12	35	26
13–16	10	23	17
9–12	6	13	10
5– 8	4	7	5
1– 4	3	3	2
	N = 135		

longest circulation periods fall). Each class interval contains 4 days; thus, the interval width is 4. The frequency column (f) contains the number of books that fall within each of the circulation class intervals. Cumulative frequencies (cf) for each class interval are also provided; these are determined by cumulatively summing the frequencies from the first interval to the last. In addition, a cumulative percentage (cp) column provides percentages of books for all circulation class intervals. These values are determined by dividing the number of books (N) into the cumulative frequency (cf). For example, $3/135 = 0.02$; $7/135 = 0.05$, etc.

Based upon the frequency distribution of book circulations shown in Table 1, the following observations can be made: the upper apparent limit of the fourth class is 16; the upper real limit of the tenth class is 40.5; the lower apparent limit of the ninth class is 33; the lower real limit of the twelfth class is 44.5; the apparent class boundaries of the last class are 57–60; the frequency of the eleventh class is 8; the relative frequency of the seventh class is 11.85; the cumulative frequency corresponding to the tenth class is 86; the percentage of books that did not circulate more than 20 days is 25.9%; and the percentage of books that circulated at least 25 but less than 33 days is 26.6%.

Frequency distributions are also useful graphical devices which facilitate computations of the standard deviation (σ) of a group of quantitative observations. Standard deviation is the root mean square of deviations from the arithmetic average (mean), and it is a measure of dispersion indicating the spread of a group of scores about the mean.

EXAMPLE 2

Problem

Students enrolled in three basic information courses at a library school completed an exercise containing 10 difficult reference questions. The maximum possible score on the exercise was 10, each question having a value of 1 point. Table 2 contains a distribution of the 83 students' scores on the exercise. Compute the standard deviation of the scores.

Solution

Scores displayed in Table 2 are not grouped into score intervals; however, the frequencies are grouped. The following procedure can be used to compute the standard deviation of the students' scores on the reference exercise: (1) multiply each score by its corresponding frequency and summate these values to obtain the sum of the scores ($\Sigma X = 409$); (2) multiply each squared score by its corresponding frequency and summate these values to obtain the sum of the squared scores ($\Sigma X^2 = 2{,}507$); and (3) use these two computed values in the following formula:

$$\sigma = \sqrt{\frac{\Sigma X^2 - \frac{(\Sigma X)^2}{N}}{N}} = \sqrt{\frac{2{,}507 - \frac{(409)^2}{83}}{83}} = \sqrt{\frac{2{,}507 - 2{,}051.43}{83}}$$

$$= \sqrt{\frac{491.57}{83}} = \sqrt{5.922} = 2.43$$

TABLE 2

Scores of 83 Students on a Reference Exercise

Scores (X)	f	Score times frequency ($X \times f$)	X^2	Frequency times score squared ($f \times X^2$)
10	3	30	100	300
9	5	45	81	405
8	4	32	64	256
7	9	63	49	441
6	12	72	36	432
5	15	75	25	375
4	11	44	16	176
3	10	30	9	90
2	7	14	4	28
1	4	4	1	4
0	3	0	0	0
	$N=83$	$\Sigma X=409$		$\Sigma X^2=2{,}507$

EXAMPLE 3

Problem

Test scores obtained by student-subjects in an experiment are provided in Table 3. Scores have been grouped into intervals that contain 5 score-points. Determine the standard deviation of the scores.

Solution

Because the results of the experiment have been grouped according to score intervals in Table 3, a different method must be used to compute the standard deviation than the procedure employed in Example 2. In the present case, the following method is appropriate: (1) choose a class interval in which the mean score would most probably fall (the guessed mean interval); (2) count off deviations (d) above and below the guessed mean interval; (3) square each deviation (d^2); (4) multiply each squared deviation by its corresponding frequency (fd^2) and summate these values (Σfd^2); and (5) use all these computed values in the formula for determining the standard deviation of grouped data:

$$\sigma = \sqrt{\frac{i^2\{\Sigma fd^2 - [(\Sigma fd)^2/N]\}}{N}}$$

where i is the interval width and d is the deviation of an interval from the guessed mean interval. With the values in Table 3, we obtain:

TABLE 3

Test Scores of 42 Experimental Subjects

Scores (X)	f	d	d^2	$(f \times d)$	$(f \times d^2)$
95–99	2	5	25	10	50
90–94	2	4	16	8	32
85–89	3	3	9	9	27
80–84	6	2	4	12	24
75–79	10	1	1	10	10
Guessed mean interval					
70–74	7	0	0	0	0
65–69	5	−1	1	−5	5
60–64	3	−2	4	−6	12
55–59	2	−3	9	−6	18
50–54	1	−4	16	−4	16
45–49	1	−5	25	−5	25
	$N=42$			$\Sigma fd=23$	$\Sigma fd^2=219$

$$\sigma = \sqrt{\frac{5^2\{219 - [(23)^2/42]\}}{42}} = \sqrt{\frac{25(206.405)}{42}} = \sqrt{122.86} = 11$$

EXAMPLE 4

Problem

In a study of the use of fiction and nonfiction, 280 randomly selected library users were surveyed concerning their likes and dislikes. Among the users questioned, 100 preferred to read only fiction, 120 preferred to read only nonfiction, and the remainder expressed a desire to read a mixture of fiction and nonfiction. Do these readers' preferences differ significantly from an equal preference distribution?

Solution

The chi-square procedure can be used to test a null, equal-frequency, chance, or a priori hypothesis. The value of χ^2 will aid the investigator to determine the significance of the difference between actual (observed) reading preferences and expected preferences. Application of the chi-square statistic is appropriate only when the occurrence of one event has no effect upon the occurrence of any other event. The chi-square formula is expressed symbolically as follows:

$$\chi^2 = \sum\left[\frac{(O - E)^2}{E}\right]$$

where O is the observed frequency and E is the expected frequency. And from the values given in Table 4:

$$\chi^2 = \frac{44.49}{93.33} + \frac{711.29}{93.33} + \frac{1{,}110.89}{93.33} = 0.4767 + 7.6212 + 11.908 = 20$$

Conclusion

To evaluate a χ^2 of 20, the degrees of freedom (d.f.) for the problem are first determined as follows: d.f. = (columns − 1) (rows − 1) = (3 − 1) (2 − 1) =

TABLE 4

Reading Preferences of 280 Library Users

	Fiction	Nonfiction	Mixed	Total
Observed	100	120	60	280
Expected	93.33	93.33	93.33	280
$(O–E)$	6.67	26.67	33.33	
$(O–E)^2$	44.49	711.29	1,110.89	

$(2 \times 1) = 2$. Next, a table of chi-square is entered at 2 degrees of freedom to obtain the 0.05 level of probability (5.991). As the observed value of chi-square (20.00) is greater than the 0.05 level of probability (5.991), the observed frequencies differ significantly from expected frequencies; thus, the null hypothesis can be rejected.

EXAMPLE 5

Problem

To determine whether a significant difference existed between circulation patterns for six categories of Greek philosophy books (designated as A, B, C, etc.), a random sample of 120 relevant titles was selected from the book collection of a large university library. Circulation data for a 3-year period for the selected books were recorded as follows: A: 25; B: 17; C: 15; D: 23; E: 24; and F: 16. Do the circulation patterns for these six categories of Greek philosophy books differ significantly from an equal distribution?

Solution

The chi-square test can be used to determine the significance of the difference between observed circulation patterns of the philosophy books and expected patterns based upon an equal distribution. With the values from Table 5, the following procedure is used:

$$\chi^2 = \frac{25}{20} + \frac{9}{20} + \frac{25}{20} + \frac{9}{20} + \frac{16}{20} + \frac{16}{20}$$
$$= 1.25 + 0.45 + 1.25 + 0.45 + 0.8 + 0.8 = 5$$

Conclusion

At 5 degrees of freedom, the 0.05 level of probability value is 11.070. As the computed chi-square (5) fails to reach this level of significance, a statistically signif-

TABLE 5

Circulation of Philosophy Books by Categories in a Large University Library

	Category of philosophy						
	A	B	C	D	E	F	Total
Observed	25	17	15	23	24	16	120
Expected	20	20	20	20	20	20	120
$(O-E)$	5	3	5	3	4	4	
$(O-E)^2$	25	9	25	9	16	16	

icant difference does not exist between the observed and expected circulations for philosophy books shown in Table 5.

EXAMPLE 6

Problem

An in-depth study was conducted of factors relating to the success of 640 graduates of a particular library school. Among the problems of the research was an examination of the relation of students' class standings with their salaries for beginning jobs in libraries. Research workers found that 300 former students who ranked academically in the upper one-half of the school's graduates had received salaries higher than the national mean beginning salary at the time of their graduation, while 60 graduates in the upper one-half of their class received starting salaries below the national norm. Of the graduates who were in the lower one-half of their class, 160 obtained starting salaries higher than the norm, and 120 obtained salaries below the norm. Test the null hypothesis that students who ranked in the upper half of their library school classes did not have a statistically significant chance of obtaining salaries above the national norm.

Solution

This problem can be solved by computing a chi-square as a test of independence. The librarians are first classified into two categories: (1) upper half of the graduating classes and (2) lower half of the graduating classes. As 460/640, or 71.9%, of the former students would have been expected to obtain salaries higher than the norm, and since 180/640, or 28.1%, of them would have been expected to obtain salaries lower than the norm, expected frequencies for all categories contained in Table 6 can be computed. The following procedure can be used to determine expected frequencies for librarians whose salaries were above or below the norm:

Salary Above Norm	
Upper half of classes:	71.87% of 360 = 258.75
Lower half of classes:	71.87% of 280 = 201.25
Salary Below Norm	
Upper half of classes:	28.13% of 360 = 101.25
Lower half of classes:	28.13% of 280 = 78.75

Then,

$$\chi^2 = \frac{(300 - 258.75)^2}{258.75} + \frac{(160 - 201.25)^2}{201.25} + \frac{(60 - 101.25)^2}{101.25} + \frac{(120 - 78.75)^2}{78.75} = 6.576 + 8.455 + 16.806 + 21.607 = 53.44$$

TABLE 6

Test of Independence Between Librarians Who Received High and Low Beginning Salaries

	Salary above norm		Salary below norm		
	Observed	Expected	Observed	Expected	Total
Upper half	300	258.75	60	101.25	360
Lower half	160	201.25	120	78.75	280
Total	460 (71.87%)		180 (28.13%)		640

Conclusion

As the observed value of the chi-square (53.44) is greater than the 0.05 significance level at 1 degree of freedom (3.841), a statistically significant difference does exist between the salaries received by former students who ranked in the upper and lower halves of their classes. Students who ranked in the upper half of their class had a better chance of obtaining salaries above the national norm.

EXAMPLE 7

Problem

An experiment was conducted to determine the effectiveness of two audiovisual demonstration projects in selected branches of a large, metropolitan public library. A record of the circulation of films, recordings, and other audiovisual materials was kept for seven randomly selected days in eight branches located in middle-class neighborhoods (Group A) and in six branches located in low-income neighborhoods (Group B). The numbers of audiovisual items borrowed during each of the selected days were as follows: Group A: 42, 45, 42, 36, 36, 45, 38, and 36; and Group B: 36, 30, 34, 27, 28, and 35. Test the null hypothesis that no significant difference exists between the circulation of audiovisual materials in Group A and Group B branch libraries.

Solution

The significance of the difference between the mean circulations of the two independent groups of branch libraries can be determined as follows: (1) compute the means for the two groups (M_1 and M_2); (2) subtract each observation in Group A (X) from M_1 to obtain x; (3) subtract each observation in Group B (Y) to obtain y; (4) square all x and y values; (5) summate all the x^2 values to obtain Σx^2; (6) summate all the y^2 values to obtain Σy^2; and (7) apply these and other required values in the t-test formula for determining the significance of the difference between the means of two independent groups.

TABLE 7

Number of Audiovisual Items Circulated in Two Groups of Libraries

Group A (X)	Group B (Y)	x	y	x^2	y^2
42	36	2	4.34	4	18.8356
45	30	5	−1.66	25	2.7556
42	34	2	2.34	4	5.4756
36	27	−4	−4.66	16	21.7156
36	28	−4	−3.66	16	13.3956
45	35	5	−3.34	25	11.1556
38		−2		4	
36		−4		16	
$M_1=40$	$M_2=31.66$			$\Sigma x^2=110$	$\Sigma y^2=73.3336$

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{\Sigma x^2 + \Sigma y^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

where M_1 is the mean of Group A, M_2 is the mean of Group B, x is the difference between each observation for Group A and M_1, and y is the difference between each observation for Group B and M_2.

Using the values given in Table 7, we obtain:

$$t = \frac{40 - 31.66}{\sqrt{\left(\frac{110 + 73.33}{8 + 6 - 2}\right)\left(\frac{8 + 6}{(8)(6)}\right)}} = \frac{8.34}{\sqrt{\left(\frac{183.33}{12}\right)\left(\frac{14}{48}\right)}} = \frac{8.34}{\sqrt{(15.277)(0.2916)}}$$

$$= \frac{8.34}{\sqrt{4.46}} = \frac{8.34}{2.11} = 3.95$$

Conclusion

At 12 degrees of freedom ($N_1 + N_2 - 2 = 8 + 6 - 2 = 12$), the 0.01 level of significance value in a table of t is 3.055. As the computed value of t (3.95) exceeds 3.055, a significant difference does exist between the circulation of audiovisual materials displayed in Table 7 for the two groups of libraries. Thus, the null hypothesis can be rejected.

EXAMPLE 8

Problem

An attitude scale was developed to measure librarians' opinions toward extremist political literature. Low scores on a questionnaire containing the scale re-

TABLE 8

Attitude Scores of Directors of Public Libraries and Their Assistant Directors

Library	Director's score (X)	Assistant's score (Y)	D	D^2
A	36	30	6	36
B	29	35	−6	36
C	38	26	12	144
D	32	46	−14	196
E	35	32	3	9
F	39	29	10	100
G	37	45	−8	64
H	36	29	7	49
I	45	48	−3	9
J	40	35	5	25
	$M_1=36.7$	$M_2=35.5$	$\Sigma D=12$	$\Sigma D^2=668$

flected negative attitudes toward the literature, and high scores reflected positive attitudes. Directors and their assistant directors in the 10 largest public library systems in a state completed the questionnaire. Attitude scores of directors and their respective assistants were as follows:

Library:	A	B	C	D	E	F	G	H	I	J
Director:	36	29	38	32	35	39	37	36	45	40
Assistant:	30	35	26	46	32	29	45	29	48	35

Test the null hypothesis that no significant difference exists between the attitudes of these directors and those of their assistants toward extremist political literature.

Solution

The statistical significance of the difference between mean scores of the two matched groups can be determined as follows: (1) compute the mean scores of the two groups (M_1 and M_2); (2) compute the difference between each director's score (X) and the respective assistant director's score (Y) to obtain D; (3) summate the values for D to obtain ΣD; (4) square each difference (D) and summate all squared differences to obtain ΣD^2; and (5) use these values in the formula for testing the significance of the difference between means of matched groups:

$$t = \frac{M_1 - M_2}{\sqrt{\dfrac{N(\Sigma D^2) - (\Sigma D)^2}{N^2(N-1)}}}$$

where M_1 is the mean of the first group, M_2 is the mean of the second group, and D is the difference between each observation in the first group and each observation in the second group. Inserting the data from Table 8, we obtain:

$$t = \frac{36.7 - 35.5}{\sqrt{\frac{10(668) - (12)^2}{10^2(10-1)}}} = \frac{1.2}{\sqrt{\frac{6{,}680 - 144}{900}}} = \frac{1.2}{\sqrt{7.262}} = \frac{1.2}{2.695} = 0.44529$$

Conclusion

A table of t is entered at 9 degrees of freedom to obtain the 0.01 level of significance (3.250). As the computed t (0.44529) does not exceed the level of significance, the null hypothesis cannot be rejected. Attitude scores of the 10 library directors and 10 assistant directors displayed in Table 8 do not differ significantly.

EXAMPLE 9

Problem

Sixteen catalogers randomly selected from technical services departments in five university libraries completed a book classification test. The test contained 10 problems, each problem having a value of one point. Scores of catalogers on the test were as follows: 6.2, 5.0, 7.3, 8.4, 4.5, 5.8, 7.1, 6.5, 9.6, 4.9, 6.0, 5.3, 7.4, 9.2, 3.8, and 2.9. The test had been completed by several similar groups in the past, and research workers had determined that the mean score for all past tests was 6.8. Test the null hypothesis that the scores of the present 16 catalogers do not differ significantly from the established norm.

Solution

In this exercise, the problem is that of determining the significance of the difference between an observed mean and a known mean. The problem can be solved using the following procedures: (1) subtract the hypothetical mean (norm) from the observed mean score; (2) subtract each score (X) from the observed mean (M_o) to obtain x; (3) square the values for x and summate the x^2 values to obtain Σx^2; and (4) apply all these values to the t-test formula for determining the significance of the difference between an observed mean and a known mean:

$$t = \frac{M_o - M_h}{\sigma\sqrt{N}}$$

where M_o is the observed mean, M_h is the hypothetical mean (norm), and σ is the standard deviation. The standard deviation of the scores can be computed with the following formula:

$$\sigma = \frac{\Sigma x^2}{\sqrt{N-1}}$$

where x is the difference between each score and M_o.

TABLE 9

Scores of Catalogers on a Classification Test

Scores (X)	x	x^2
6.2	0.04	0.0016
5.0	−1.24	1.5376
7.3	1.06	1.1236
8.4	2.16	4.6656
4.5	−1.74	3.0276
5.8	−0.44	0.1936
7.1	0.86	0.7396
6.5	0.26	0.0676
9.6	3.36	11.2896
4.9	−1.34	1.7956
6.0	−0.24	0.0576
5.3	−0.94	0.8836
7.4	1.16	1.3456
9.2	2.96	8.7616
3.8	−2.44	5.9536
2.9	−3.34	11.1556
$M_o=6.24$		$\Sigma X^2=52.60$

And from the values in Table 9:

$$\sigma = \frac{52.60}{\sqrt{16-1}} = \sqrt{3.50} = 1.872$$

$$t = \frac{6.24 - 6.8}{\frac{1.872}{\sqrt{16}}} = \frac{-0.56}{\frac{1.872}{4}} = \frac{-0.56}{0.468} = 1.196$$

Conclusion

As the observed value of t (1.196) does not exceed the 0.01 level of significance (2.947 at 15 degrees of freedom), the null hypothesis cannot be rejected. No significant difference exists between the mean score of the 16 catalogers, displayed in Table 9, and the previously established average.

EXAMPLE 10

Problem

Imprint dates have been proposed as a condition related to the frequency with which library books circulate. To study this proposition, 20 books from a library's collection were randomly selected from accessions lists for the years 1965–1974. Circulation data for a 1-year period (1975) of works selected in the sample were as follows: four 1969 books that had circulated 8, 0, 3, and 5 times; four 1974

TABLE 10

Circulation Record for 20 Selected Books

Imprint date (X)	Number of circulations (Y)	X^2	Y^2	XY
65	3	4,225	9	195
65	0	4,225	0	0
67	2	4,489	4	134
67	1	4,489	1	67
67	4	4,489	16	268
68	4	4,624	16	272
69	8	4,761	64	552
69	0	4,761	0	0
69	3	4,761	9	207
69	5	4,761	25	345
70	10	4,900	100	700
70	18	4,900	324	1,260
71	12	5,041	144	852
71	26	5,041	676	1,846
73	28	5,329	784	2,044
73	33	5,329	1,089	2,409
74	12	5,476	144	888
74	18	5,476	324	1,332
74	28	5,476	784	2,072
74	15	5,476	225	1,110
$\Sigma X=1,399$	$\Sigma Y=230$	$\Sigma X^2=98,029$	$\Sigma Y^2=4,738$	$\Sigma XY=16,553$

books that had circulated 12, 18, 28, and 15 times; three 1967 books that had circulated 2, 1, and 4 times; two 1970 books that had circulated 10 and 18 times; two 1965 books that had circulated 3 and 0 times; two 1971 books that had circulated 12 and 26 times; two 1973 books that had circulated 28 and 33 times; and one 1968 book that had circulated 4 times. These data are displayed in the frequency distribution contained in Table 10. Test the null hypothesis that no significant difference exists between imprint dates and the frequency of circulation of these books.

Solution

The hypothesis can be tested statistically by: first, computing the correlation coefficient between imprint dates and numbers of circulations, and then, by determining whether the computed correlation coefficient is statistically significant. These procedures require the following steps: (1) sum the imprint dates (X); (2) sum the number of circulations (Y); (3) determine the square of each X observation and summate these values to obtain ΣX^2; (4) determine the square of each Y observation and summate these values to obtain ΣY^2; (5) multiply each pair of X and Y observations; (6) summate all X times Y products to obtain ΣXY; and (7) use all these values in the Pearson product-moment correlation raw-score formula:

$$r = \frac{\Sigma XY - \dfrac{\Sigma X \Sigma Y}{N}}{\sqrt{\Sigma X^2 - \dfrac{(\Sigma X)^2}{N}}\sqrt{\Sigma Y^2 - \dfrac{(\Sigma Y)^2}{N}}}$$

The formula for determining the significance of the correlation coefficient is as follows:

$$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

where N is the number of pairs. Proceeding as formulated and using the values from Table 10, we make the following computations:

$$r = \frac{16{,}553 - \dfrac{(1{,}399)(230)}{20}}{\sqrt{98{,}029 - \dfrac{(1{,}399)^2}{20}}\sqrt{4{,}738 - \dfrac{(230)^2}{20}}} = 0.781$$

$$t = \frac{0.781\sqrt{20-2}}{\sqrt{1-(0.781)^2}} = 5.31$$

Conclusion

Degrees of freedom in this problem are determined as follows: d.f. $= N - 2$, or $20 - 2 = 18$. As the correlation coefficient is positive (0.78) and the computed value of t (5.31) exceeds the 0.01 significance level (2.878), imprint dates and numbers of circulations shown in Table 10 have a real or significant relationship, rather than a chance relationship. Thus, the null hypothesis can be rejected.

EXAMPLE 11

Problem

The following time periods, in minutes, were required by 10 library assistants to complete two tasks, X and Y:

Assistant:	A	B	C	D	E	F	G	H	I	J
Task X:	3.3	3.4	3.5	4.4	4.6	4.7	4.8	5.0	5.1	5.2
Task Y:	8.2	9.1	9.3	9.3	9.4	10.5	10.6	11.3	11.5	11.8

The above data were produced by an experiment conducted in a university library's processing department to determine the relationship between performances of employees using different methods to accomplish a task. Research data from the

experiment are displayed in Table 11. The following hypothesis was posed in the research process: no significant relationship exists between the performances of library assistants on tasks X and Y. (That is, high time periods required to perform task X are not associated with the same time periods necessary to complete task Y.)

Solution

Investigators proposed an inverse relationship between the two variables: time required to complete task X and time required to complete task Y. Thus, computation of a correlation coefficient will demonstrate whether the relationship between the variables is positive or negative, as well as the degree to which the variables are related. Assuming that the investigators have access to a desk calculator, the following formula can be used:

$$r = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\ \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Then, from the values in Table 11:

$$r = \frac{10(451.45) - (44)(101)}{\sqrt{[10(198.4) - (44)^2]}\ \sqrt{[10(1{,}033.18) - (101)^2]}}$$

$$= \frac{70.5}{\sqrt{(48)(130.8)}} = \frac{70.5}{(6.93)(11.44)} = \frac{70.5}{79.28} = 0.89$$

$$t = \frac{0.89\sqrt{10-2}}{\sqrt{1-(0.89)^2}} = \frac{0.89(2.828)}{\sqrt{1-7{,}921}} = \frac{2.51692}{\sqrt{7{,}920}} = \frac{2.51692}{88.99} = 0.0282$$

TABLE 11

Time Periods (in Minutes) Required by Library Assistants to Perform Two Tasks (X and Y)

Minutes required				
Task X	Task Y	X^2	Y^2	XY
3.3	8.2	10.89	67.24	27.06
3.4	9.1	11.56	82.81	30.94
3.5	9.3	12.25	86.49	32.55
4.4	9.3	19.36	86.49	40.92
4.6	9.4	21.16	88.36	43.24
4.7	10.5	22.09	110.25	49.35
4.8	10.6	23.04	112.36	50.88
5.0	11.3	25.00	127.69	56.50
5.1	11.5	26.01	132.25	58.65
5.2	11.8	27.04	139.24	61.36
$\Sigma X = 44.0$	$\Sigma Y = 101.0$	$\Sigma X^2 = 198.40$	$\Sigma Y^2 = 1{,}033.18$	$\Sigma XY = 451.45$

Conclusion

At 8 degrees of freedom, the reliability of the correlation coefficient (0.89) is tested at the 0.01 level of significance. The value of t (0.0282) lies below the 0.01 level of significance (3.355); thus, the null hypothesis cannot be rejected. The performances of library assistants on task X are not positively related to performances on task Y, insofar as time is concerned.

Writing Research Proposals

The basic skills required of a research worker extend to the writing of lucid expository prose, particularly in the form of research proposals and reports. A *research proposal* is a written description of the purpose, scope, and methodology of an anticipated, disciplined study. All essential aspects of a proposed inquiry are described in the research prospectus. A proposal generally includes the following elements: (1) a clear definition of the research problem, along with the exploratory question or research hypothesis; (2) a statement about the significance of the problem to be investigated; (3) a critical review of related literature, including research reports of related studies; (4) a description of methods to be used for the collection and analysis of research data; and (5) a statement about limitations of the study and how these limitations might affect findings and conclusions. Research proposals are generally viewed as documents that will aid investigators to develop appropriate hypotheses or exploratory questions, to devise effective methods for the collection of pertinent data, and to select productive analytical schemes. In addition, research proposals are tools which, when properly prepared, can aid investigators to plan all critical steps of disciplined inquiries. Furthermore, the written prospectus serves as a communication vehicle that announces future research projects to scholars and other persons within librarianship, as well as to sponsors who can provide research grants or other assistance.

Research proposals are usually prepared and submitted to library schools by degree-seeking students. Normally, a faculty research committee will review, evaluate, and judge each proposal. If approved, a proposal is normally regarded as a contract between the degree candidate and the academic institution. Research proposals are regularly evaluated both in and outside of academic institutions on the basis of the following criteria: (1) the degree of prior planning and preparation that has been devoted to the anticipated inquiry; (2) the suitability of the selected methods to the investigative task; and (3) the significance of the purpose of the described research activity. Soundly conceptualized and clearly described investigation plans often have a better chance of becoming worthwhile and successful inquiries than studies that have not been adequately planned and outlined.

The location and review of related research reports and other pertinent literature represents a scientific obligation of investigators. Thus, an important aspect of research planning and proposal writing is a *literature search.* An investigator must possess a thorough understanding of the knowledge that has already been produced

related to the subject to be investigated. During a literature search, published information relating to the subject of an inquiry is identified, located, and analyzed. In addition to producing relevant and valuable information, the literature review can help research workers regard their planned studies as parts of larger investigative efforts about a particular subject or problem area, rather than as isolated inquiries. Literature reviews also sometimes assist research workers to more clearly delineate research problems, to identify previously overlooked materials and information, to choose appropriate methodologies for solving problems, and to become more aware of theoretical implications surrounding inquiries.

A variety of general and specialized bibliographies and indexes are available as aids to research workers who attempt to conduct effective literature searches in the field of library and information science. With respect to literature searches, the most useful guides to research information provide a subject approach to their contents. *Library Literature*, an H. W. Wilson Company author and subject index to selected library science materials, is among the most useful sources for locating relevant, contemporary literature. When searches are necessary for retrospective or historical information, the following indexes might prove to be beneficial: Margaret Burton and Marion E. Vosburg's *A Bibliography of Librarianship* (Library Association, London, 1934); Harry G. T. Cannons's *Bibliography of Library Economy* (American Library Association, Chicago, 1927); *Library Literature 1921–1932* (American Library Association, Chicago, 1934); and Ann Harwell Jordan and Melbourne Jordan's *Cannons' Bibliography of Library Economy, 1876–1920: An Author Index with Citations* (Scarecrow Press, Metuchen, N.J., 1976).

Theses and dissertations are often valuable sources of research information. The *Library Quarterly*, a research journal published at the University of Chicago, features an annual list of accepted library science dissertations, usually in the October issue. The *Journal of Education for Librarianship* provides a list of approved doctoral dissertation topics. In addition to these contemporary lists, other bibliographies of library science theses and dissertations prepared in past years are available for the conduct of productive literature searches. Among these are the following: *Library Science Dissertations: 1925–1960* (U.S. Office of Education, Library Services Branch, Bureau of Educational Research and Development, 1963); David H. Eyman's *Doctoral Dissertations in Library Science: Titles Accepted by Accredited Library Schools, 1930–1972* (Xerox University Microfilms, Ann Arbor, Mich., 1973); Michael Reynold's *Guide to Theses and Dissertations: An International Annotated Bibliography of Bibliographies* (Gale Research Company, Detroit, 1975); and Shirley Magnotti's *Master's Theses in Library Science: 1960–1969* (Whitson Publishing Co., Troy, N.Y., 1975).

The following specialized reference tools have also proved to be valuable for literature searches within the field: *Advances in Librarianship* (Academic Press, New York, 1970–, annual); *Annual Review of Information Science and Technology* (1966–, publisher varies); *Encyclopedia of Library and Information Science* (Dekker, New York, 1968–); *The ERIC Educational Documents Abstracts* (CCM Information Corp., New York, 1974); *Five Years' Work in Librarianship,*

1928–1960 (Library Association, London, 1958); Michael H. Harris's *A Guide to Research in American Library History*, 2nd ed. (Scarecrow Press, Metuchen, N.J., 1974); *Library and Information Science Abstracts* (Library Association, London, 1969–); and *Library and Information Science Abstracts: Cumulative Index 1929–73* (Learned Information, New York and Oxford, 1975).

Writing Research Reports

News about completed studies is communicated in *research reports*, which are generally detailed written accounts of the methods and results of inquiries. When research activities are not effectively reported by investigators, inquiries will have little or no impact on library practices or theories. Research reports are sometimes presented orally at professional or scholarly meetings or at conferences; however, most accounts of investigations are written and published either as research articles in scholarly journals, as monographs, or as parts of some other publication such as proceedings or annual reviews of societies. The author of a research report usually attempts to tailor narrative accounts of investigations to the needs and expectations of an appropriate audience. The selection of a publication vehicle often depends upon one or more of the following factors: (1) desired audience, (2) topic of the research, (3) nature of the material presented, and (4) whether the primary emphasis of the report is on the practical application of findings or upon theoretical considerations.

Scholarly research articles based upon substantial and disciplined inquiries are often accepted for publication in the *Library Quarterly*. A number of other library and information science professional journals are receptive to articles based upon research efforts, including the following: *College and Research Libraries*, *Journal of the American Society for Information Science*, *Journal of Documentation*, *Journal of Education for Librarianship*, *Journal of Library Automation*, *Journal of Library History*, *Library History*, *Library Resources and Technical Services*, *School Media Quarterly*, and *Special Libraries*. In addition to these publication outlets, the journals and bulletins of local, state, and regional library associations sometimes accept articles based upon research, particularly those about studies that are of local appeal or that have implications for local application. Occasionally, journals outside the field of library and information science will accept research articles by librarians when a completed study is of possible interest to scholars in other fields.

Although accounts of completed research can be variously organized, the generalized format of research reports is as follows: (1) explanation of the theoretical or practical context out of which the research problem originated; (2) critical summary of related research efforts and conclusions as reported in the literature; (3) explanation of the hypotheses or the exploratory research questions; (4) explanation of the procedures and methods that were used to carry out the research; (5) explanation of how the collected data were analyzed; and (6) explanation and inter-

pretation of research findings and conclusions. Writers of effective research reports structure their accounts of disciplined studies so that essential elements of inquiries are recorded clearly and accurately. An awareness of the fundamentals of good expository writing can be an asset to authors of reports. Effective research reports are the byproducts of carefully planned outlines; the use of clear and exact words; logical, consistent, and concise sentences; appropriate organization of paragraphs and sections; and thorough revision, rewriting, and proofreading. Report writers should be aware, however, that superb writing skills can neither correct nor conceal deficiencies of ill-conceived and poorly conducted inquiries.

A detailed written account of a study can communicate research activities, findings, and conclusions to scholars in such a fashion that the data might be verified by replicated studies. In the arena of public scrutiny, critics utilize research reports to determine the quality of completed investigations and the value of studies to scholars and other members of the profession.

BIBLIOGRAPHY

General Sources

Best, John W., *Research in Education*, 3rd ed., Prentice-Hall, Englewood Cliffs, N.J., 1977.

Beveridge, William I. B., *The Art of Scientific Investigation*, Mercury Books, London, 1961.

Blalock, Hubert M., and A. Blalock, *Methodology in Social Science Research*, McGraw-Hill, New York, 1968.

Brandt, Richard M., *Studying Behavior in Natural Settings*, Holt, Rinehart and Winston, New York, 1972.

Brooks, Philip C., *Research in Archives: The Use of Unpublished Primary Sources*, Univ. of Chicago Press, Chicago, 1969.

Davies, John T., *The Scientific Approach*, 2nd ed., Academic Press, New York, 1973.

Dellow, E. L., *Methods of Science: An Introduction to Measuring and Testing for Laymen and Students*, Universe Books, New York, 1970.

Emmert, Philip, and William D. Brooks, *Methods of Research in Communication*, Houghton Mifflin, Boston, 1970.

Festinger, Leon, and Daniel Katz, eds., *Research Methods in the Behavioral Sciences*, Holt, Rinehart and Winston, New York, 1953.

Good, Carter V., *Essentials of Educational Research: Methodology and Design*, 2nd ed., Appleton-Century-Crofts, New York, 1972.

Gross, Alan E. et al., *An Introduction to Research in Social Psychology: Exercises and Examples*, Wiley, New York, 1972.

Habenstein, Robert W., *Pathways to Data: Field Methods for Studying Ongoing Social Organizations*, Aldine Publishing Co., Chicago, 1970.

Harris, Errol E., *Hypothesis and Perception: The Roots of Scientific Method*, Humanities Press, New York, 1970.

Huck, Schuyler W. et al., *Reading Statistics and Research*, Harper and Row, New York, 1974.

Jeffreys, Sir Harold, *Scientific Inference*, 3rd ed., Cambridge, At the University Press, 1973.

Kaplan, Abraham, *The Conduct of Inquiry: Methodology for Behavioral Science*, Chandler Publishing Co., Scranton, Pa., 1964.

Keppel, Geoffrey, *Design and Analysis: A Researcher's Handbook*, Prentice-Hall, Englewood Cliffs, N.J., 1973.

Kerlinger, Frederick N., *Foundations of Behavioral Research*, 2nd ed., Holt, Rinehart and Winston, New York, 1973.

Kerlinger, Frederick N., *Multiple Regression in Behavioral Research*, Holt, Rinehart and Winston, New York, 1973.

Kirk, Roger E., *Experimental Design: Procedures for the Behavioral Sciences*, Brooks/Cole Publishing Co., Belmont, Calif., 1968.

Lachenmeyer, Charles W., *The Essence of Social Research: A Copernican Revolution*, Free Press, New York, 1973.

Miller, Delbert C., *Handbook of Research Design and Social Measurement*, 2nd ed., McKay, New York, 1970.

Nagel, Ernest et al., *Observation and Theory in Science*, Johns Hopkins Press, Baltimore, Md., 1971.

Neale, John M., and Robert M. Liebert, *Science and Behavior: An Introduction to Methods of Research*, Prentice-Hall, Englewood Cliffs, N.J., 1973.

Popper, Robert, *The Logic of Scientific Discovery*, Harper and Row, New York, 1965.

Ross, Robert, *Research: An Introduction*, Barnes and Noble Books, New York, 1974.

Selltiz, Claire et al., *Research Methods in Social Relations*, published for the Society for the Psychological Study of Social Issues, rev. ed., Holt, Rinehart and Winston, New York, 1959.

Van Dalen, Deobold B., *Understanding Educational Research*, 3rd ed., McGraw-Hill, New York, 1973.

Wiersma, William, *Research Methods in Education: An Introduction*, Lippincott, Philadelphia, 1969.

Research in Library and Information Science

Aaron, S. L., "Review of Selected Research Studies in School Librarianship, 1967–71," *School Lib.*, **21**, 29–46 (Summer 1972).

American Library Association, Executive Board, "Policy Statement on the Role of Research in the American Library Association," *Amer. Lib.*, **3**, 629–631 (June 1972).

Bookstein, Abraham, "How to Sample Badly," *Lib. Quart.*, **44**, 124–132 (April 1973).

Borden, Arnold K., "The Sociological Beginnings of the Library Movement," *Lib. Quart.*, **1**, 278–282 (1931).

Borko, Harold, ed., *Targets for Research in Library Education*, American Library Assoc., Chicago, 1973.

Bundy, Mary Lee, and Paul Wasserman, eds., *Reader in Research Methods for Librarianship*, NCR Microcard Editions, Washington, D.C., 1970.

Busha, Charles H., and Royal Purcell, "A Textual Approach for Promoting Rigorous Research in Librarianship," *J. Educ. Librarianship*, **14**, 3–15 (Summer 1973).

Butler, Pierce, *An Introduction to Library Science*, Univ. of Chicago Press, Chicago, 1944.

Cleverdon, Cyril W., "Review of the Origins and Development of Research: Information and Its Retrieval," *Aslib Proc.*, **22**, 538–548 (November 1970).

Cylke, F. K., and M. B. Zenich, "Funding Library Research in the Federal Government," *Drexel Lib. Quart.*, **6**, 306–325 (July–October 1970).

Dale, Doris C., "Historical Methods: Some Basic Guidelines," *Herald Lib. Science*, **11**, 114–124 (April 1972).

Dougherty, Richard M., and Fred J. Heinritz, *Scientific Management of Library Operations*, Scarecrow Press, Metuchen, N.J., 1966.

Drott, M. Carl, "Random Sampling: A Tool for Library Research," *College Research Lib.*, **30**, 119–125 (March 1969).

Eaton, Andrew J., "Research in Librarianship in the U.S.A.," *Libri*, **21**(4), 350–360 (1971).

Fry, Bernard M., and Miles A. Libby, "Research Conducted in Library Schools," *Inform. Storage Retrieval*, **9**, 249–255 (May 1973).

Fry, Bernard M., and Miles A. Libby, "Status of Library Research in the Federal Government," *Drexel Lib. Quart.*, **6**, 290–305 (July–October 1970).

Gardner, George L., "Empirical Study of Reference," *College Research Lib.*, **30**, 130–155 (March 1969).

Garrison, Guy, *Research Methods in Librarianship*, Vol. 13 of *Library Trends* (July 1964).

Gilchrist, Alan, "Research in Information Science," in *British Librarianship and Information Science, 1966–1970*, Library Association, London, 1972, pp. 320–341.

Goldhor, Herbert, "A Critique of the Library Survey," *Illinois Lib.*, **32**, 609–612 (November 1950).

Goldhor, Herbert, *An Introduction to Scientific Research in Librarianship*, U.S. Department of Health, Education, and Welfare, Bureau of Research, Washington, D.C., 1969.

Hoadley, Irene B., and A. S. Clark, eds., *Quantitative Methods in Librarianship: Standards, Research, Management*, Proceedings and Papers of an Institute Held at the Ohio State University, August 3–16, 1969, Greenwood Press, 1972.

Introductory Guide to Research in Library and Information Studies in the U.K., edited by Patricia Layzell Ward, in association with Jack Burkett and Philip Whiteman; on behalf of the ABLISS Working Party on Research, Library Association, London, 1975.

Kahn, A. M. C., "Objectives: A Review of Some of the Research Now Being Done and Its Relationship with the Aims and Objectives of Professional Practice," *Lib. Assoc. Rec.*, **72**, 191–193 (May 1970).

Kajberg, Leif, "Research Methods for Librarianship in Retrospect: Some Observations on American Achievements," *Libri*, **23**(1), 52–57 (1973).

Lancaster, Frederick W., *Information Retrieval Systems: Characteristics, Testing and Evaluation*, Wiley, New York, 1968.

McMullen, C. Haynes, "Place of Research in Library Schools," in International Conference on Education for Librarianship, 1967, University of Illinois, *Library Education: An International Survey*, Univ. of Illinois, Graduate School of Library Science, 1968, pp. 345–372.

Newsletter on Library Research, No. 1–, September 1972–, Univ. of Illinois, Graduate School of Library Science.

Rubenstein, Albert H. et al., "Search versus Experiment: The Role of the Research Librarian," *College Research Lib.*, **34**, 280–286 (July 1973).

Schick, Frank L., "Library Science Research," *J. Educ. Librarianship*, **3**, 84–85 (Fall 1962).

Shaw, David, "Sampling Theory for Bibliographical Research," *Library: Trans. Bibliographical Soc.* (London), **27**, 310–319 (December 1972).

Special Libraries Association, Research Committee, "Statement of the Role and Scope of SLA Involvement in Research As Approved by the Board of Directors, September, 1969," *Special Lib.*, **61**, 467–468 (October 1970).

Swanson, Rowena W., "Research Methods, an Introductory Course for Library School Curricula," in American Society for Information Science, Conference, 1971, *Proceedings*, Vol. 8: *Communication for Decision Makers*, Greenwood Press, 1971, pp. 147–150.

Swanson, Rowena W., and Joseph Mayer, "Performing Evaluation Studies in Information Science," *J. Amer. Soc. Inform. Science*, **26**, 140–156 (May 1975).

Tauber, Maurice F., ed., *Research in Librarianship*, Vol. 6 of *Library Trends* (October 1957).

Vickery, B. C., "Methodology in Research," *Aslib Proc.*, **22**, 597–606 (December 1970).

Walker, Richard D., "Research Methods: A Selected Bibliography," *J. Educ. Librarianship*, **7**, 210–219 (Spring 1967).

Waples, Douglas, *Investigating Library Problems*, Univ. of Chicago Press, Chicago, 1939.

Wennerberg, Ulf, "Using the Delphi Technique for Planning the Future of Libraries," *UNESCO Bull. Lib.*, **26**, 242–246 (September 1972).

Whiteman, Philip M., "Review of the Origins and Development of Research: Tradition, Innovation and Research in the Library," *Aslib Proc.*, **22**, 526–537 (November 1970).

Wynar, Bohdan S., *Research Methods in Library Science: A Bibliographical Guide with Topical Outlines*, Libraries Unlimited, Littleton, Colo., 1971.

Wynar, Lubomyr R., "Place of Statistics in the Library Science Curriculum," *J. Educ. Librarianship*, **11**, 155–162 (Fall 1970).

Yelland, M., "Research in Librarianship," in *British Librarianship and Information Science, 1966–1970*, edited by H. A. Whatley, Library Association, London, 1972, pp. 309–319.

Zweizig, Douglas L., "With Our Eye on the User: Needed Research for Information and Referral in the Public Library," *Drexel Lib. Quart.*, **12**, 48–58 (January–April 1976).

Experimental Research

Dayton, Chauncey M., *The Design of Educational Experiments*, McGraw-Hill, New York, 1970.

Fisher, Ronald A., *The Design of Experiments*, 8th ed., Hafner Publishing Co., New York, 1971.

Hicks, Charles R., *Fundamental Concepts in the Design of Experiments*, 2nd ed., Holt, Rinehart and Winston, New York, 1973.

John, Peter W. M., *Statistical Design and Analysis of Experiments*, Macmillan, New York, 1971.

Keith, Virginia, *Design and Analysis in Experimentation*, Univ. of Ottawa Press, Ottawa, 1972.

Kempthorne, Oscar, *The Design and Analysis of Experiments*, R. E. Krieger Publishing Co., Huntington, N.Y., 1973.

Kleijnen, Jacobus P. C., *Statistical Techniques in Simulation*, Dekker, New York, 1974–1975, 2 vols.

Leaver, R. H., *Analysis and Presentation of Experimental Results*, Wiley, New York, 1974.

Lee, Wayne, *Experimental Design and Analysis*, W. H. Freeman, San Francisco, 1975.

Mendenhall, William, *Introduction to Linear Models and the Design and Analysis of Experiments*, Wadsworth Publishing Co., Belmont, Calif., 1968.

Myers, Jerome L., *Fundamentals of Experimental Design*, 2nd ed., Allyn and Bacon, Boston, 1972.

Ogawa, Junjiro, *Statistical Theory of the Analysis of Experimental Design*, Dekker, New York, 1974.

Ottestad, Per, *Statistical Models and Their Experimental Application*, Hafner Publishing Co., New York, 1970.

Peng, Kan Chen, *The Design and Analysis of Scientific Experiments: An Introduction with Some Emphasis on Computation*, Addison-Wesley, Reading, Mass., 1967.

Vajda, S., *The Mathematics of Experimental Design: Incomplete Block Designs and Latin Squares*, Hafner Publishing Co., New York, 1967.

Winer, B. J., *Statistical Principles in Experimental Design*, 2nd ed., McGraw-Hill, New York, 1971.

Wolberg, John R., *Prediction Analysis*, Van Nostrand, Princeton, N.J., 1967.

Yates, Frank, *Experimental Design: Selected Papers of Frank Yates*, Hafner Publishing Co., Darien, Conn., 1970.

Survey Research

Babbie, Earl R., *Survey Research Methods*, Wadsworth Publishing Co., Belmont, Calif., 1973.

Backstrom, Charles H., and Gerald D. Hursh, *Survey Research*, Northwestern Univ. Press, Chicago, 1963.

Berdie, Douglas R., and John F. Anderson, *Questionnaires: Design and Use*, Scarecrow Press, Metuchen, N.J., 1974.

Cochran, William G., *Sampling Techniques*, 2nd ed., Wiley, New York, 1963.

Converse, Jean M., and Howard Schuman, *Conversations at Random: Survey Research As Interviewers See It*, Wiley, New York, 1974.

Davis, James A., *Elementary Survey Analysis*, Prentice-Hall, Englewood Cliffs, N.J., 1971.

Erdos, Paul L., and Arthur J. Morgan, *Professional Mail Surveys*, McGraw-Hill, New York, 1970.

Gordon, Raymond L., *Interviewing: Strategy, Techniques and Tactics*, rev. ed., Dorsey Press, Homewood, Ill., 1975.

Maranell, Gary M., comp., *Scaling: A Sourcebook for Behavioral Scientists*, Aldine Publishing Co., Chicago, 1974.

Nemanich, Dorothy, and Diane O'Rourke, *A Manual for the Coding of Survey Data*, Kendall/Hart Publishing Co., Dubuque, Ia., 1975.

Stephan, Frederick F., and Philip J. McCarthy, *Sampling Opinions: An Analysis of Survey Procedure*, Greenwood, Westport, Conn., 1974.

Stuart, Alan, *Basic Ideas of Scientific Sampling*, 2nd ed., Hafner, New York, 1976.

Sudman, Seymour, and Norman M. Bradburn, *Response Effects in Surveys: A Review and Synthesis*, Aldine Publishing Co., Chicago, 1974.

Historical Research

Ballard, Martin, ed., *New Movements in the Study and Teaching of History*, Indiana Univ. Press, Bloomington, 1970.

Barzun, Jacques, and Henry F. Graff, *The Modern Researcher*, rev. ed., Harcourt, Brace, New York, 1970.

Ditzion, Sidney, "Research and Writing of Library History," in *Toward a Theory of Librarianship: Papers in Honor of Jesse Hauk Shera*, edited by Conrad H. Rawski, Scarecrow Press, Metuchen, N.J., 1973, pp. 55–69.

Dollar, Charles M., and Richard J. Jensen, *Historian's Guide to Statistics: Quantitative Analysis and Historical Research*, Holt, Rinehart and Winston, New York, 1971.

Gottschalk, Louis R., *Understanding History: A Primer of Historical Method*, 2nd ed., Knopf, New York, 1969.

Harris, Michael H., *Guide to Research in American Library History*, 2nd ed., Scarecrow Press, Metuchen, N.J., 1974.

Harvard University, Henry Adams History Club, *A Selected Bibliography of History*, 4th ed., Harvard University, Cambridge, Mass., 1970.

Keeling, Denis F., ed., *British Library History: Bibliography, 1969–1972*, Library Association, London, 1975.

Kelly, Thomas, "Thoughts on the Writing of Library History," *Lib. History*, **3**, 161–169 (Spring 1975).

Lowitt, Richard, "Case Study in Biographical Research," *J. Lib. History*, **4**, 123–133 (April 1969).

McCoy, Florence N., *Researching and Writing in History: A Practical Handbook for Students*, Univ. of California Press, Berkeley, 1974.

Metcalfe, Josephine, *A Chronology of Librarianship*, Scarecrow Press, Metuchen, N.J., 1968.

Moehiman, Arthur H. et al., *Guide to Computer-Assisted Historical Research in American Education*, Univ. of Texas Press, Austin, 1969.

Poulton, Helen J., and Marguerite S. Howland, *The Historian's Handbook: A Descriptive Guide to Reference Works*, Univ. of Oklahoma Press, Norman, 1972.

Shafer, Robert J., ed., *A Guide to Historical Method*, rev. ed., Dorsey Press, Homewood, Ill., 1974.

Shera, Jesse H., "On the Value of Library History," *Lib. Quart.*, **22**, 240–251 (July 1952).

Stevens, Rolland E., ed., *Historical and Bibliographical Methods in Library Research*, Conference on Historical and Bibliographical Methods in Library Research, Urbana, Ill., 1970, Univ. of Illinois, Graduate School of Library Science, Urbana, 1971.

Thornton, John L., *Chronology of Librarianship: An Introduction to the Histories of Libraries*, Grafton and Co., London, 1941.

Vincent, John M., *Aids to Historical Research*, Books for Libraries Press, Freeport, N.Y., 1934; reprinted 1969.

Winger, Howard, ed., *American Library History: 1876–1976*, Vol. 25 of *Library Trends* (July 1976).

Winks, Robin W., comp., *Historian as Detective: Essays on Evidence*, Harper and Row, New York, 1969.

Operations Research

Buchan, J. F., and E. Koenigsberg, *Scientific Inventory Management*, Prentice-Hall, Englewood Cliffs, N.J., 1962.

Hamburg, Morris et al., *Library Planning and Decision-Making Systems*, M.I.T. Press, Cambridge, Mass., 1974.

Hillier, Frederick S., *Operations Research*, 2nd ed., Holden-Day, San Francisco, 1974.

Hillier, Frederick S., and Gerald J. Lieberman, *Introduction to Operations Research*, Holden-Day, San Francisco, 1967.

Lancaster, F. W., ed., *Systems Design and Analysis for Libraries*, Vol. 21 of *Library Trends* (April 1973).

Leimkuhler, Ferdinand F., "Operations Research and Information Science—A Common Cause," *J. Amer. Soc. Inform. Science*, **24**, 2–8 (January–February 1973).

Miller, David W., and Martin K. Starr, *Executive Decisions and Operations Research*, 2nd ed., Prentice-Hall, Englewood Cliffs, N.J., 1969.

Morse, Philip M., *Library Effectiveness: A Systems Approach*, M.I.T. Press, Cambridge, Mass., 1968.

Morse, Philip M., and George E. Kimball, *Methods of Operations Research*, 1st ed., rev., published jointly by the Technology Press of M.I.T. and Wiley, New York, 1951.

Statistical Methods

Burington, Richard S., and Donald C. May, Jr., *Handbook of Probability and Statistics with Tables*, 2nd ed., McGraw-Hill, New York, 1970.

Chase, Clinton I., *Elementary Statistical Procedures*, 2nd ed., McGraw-Hill, New York, 1976.

Fisher, Ronald A., *Statistical Methods for Research Workers*, 14th ed., rev. and enl., Oliver and Boyd, Edinburgh, 1970.

Fisher, Ronald A., and Frank Yates, *Statistical Tables for Biological, Agricultural and Medical Research*, 6th ed., Hafner Publishing Co., New York, 1974.

Hoel, Paul G., *Elementary Statistics*, 4th ed., Wiley, New York, 1976.

Koenker, Robert H., *Simplified Statistics for Students in Education and Psychology*, Littlefield, Adams and Co., Totowa, N.J., 1971.

Mood, Alexander M. et al., *Introduction to the Theory of Statistics*, 3rd ed., McGraw-Hill, New York, 1974.

Mosteller, Frederick et al., *Probability with Statistical Applications*, 2nd ed., Addison-Wesley, Reading, Mass., 1970.

Namias, Jean, comp., *Applications of Quantitative Methods for Business Decisions*, St. John's Univ. Press, Jamaica, N.Y., 1974.

Ostle, Bernard, *Statistics in Research: Basic Concepts and Techniques for Research Workers*, 2nd ed., Iowa State Univ. Press, Ames, 1963.

Pazer, Harold L., and Lloyd A. Swanson, *Modern Methods for Statistical Analysis*, Intext Educational Publishers, Scranton, Pa., 1972.

Phillips, John L., Jr., *Statistical Thinking: A Structural Approach*, W. H. Freeman, San Francisco, 1973.

Rand Corporation, *A Million Random Digits with 100,000 Normal Deviates*, Free Press, Glencoe, Ill., 1955.

Roscoe, John T., *Fundamental Research Statistics for the Behavioral Sciences*, Holt, Rinehart and Winston, New York, 1969.

Schmid, C. F., *Handbook of Graphical Presentation*, Ronald Press, New York, 1954.

Slonim, Morris J., *Sampling in a Nut Shell*, Simon and Schuster, New York, 1960.

Smith, George M., *A Simplified Guide to Statistics, for Psychology and Education*, 4th ed., Holt, Rinehart and Winston, New York, 1970.

Spear, Mary Eleanor, *Practical Charting Techniques*, McGraw-Hill, New York, 1969.

Wallis, W. Allen, and Harry V. Roberts, *The Nature of Statistics*, Free Press, New York, 1965.

Willemsen, Eleanor Walker, *Understanding Statistical Reasoning: How to Evaluate Research Literature in the Behavioral Sciences*, W. H. Freeman, San Francisco, 1973.

Yamane, Taro, *Statistics: An Introductory Analysis*, 3rd ed., Harper and Row, New York, 1973.

Research Proposals and Reports

Allen, George C., *The Graduate Student's Guide to Theses and Dissertations: A Practical Manual for Writing and Research*, Josey-Bass, San Francisco, 1973.

Auger, Charles P., ed., *Use of Reports Literature*, Archon Books, Hamden, Conn., 1975.

Foster, John, Jr., *Science Writer's Guide*, Columbia Univ. Press, New York, 1962.

Koefod, Paul E., *The Writing Requirements for Graduate Degrees*, Prentice-Hall, Englewood Cliffs, N.J., 1964.

Krug, Judith F., "Writing Research Proposals," *ALA Bull.*, **61**, 1314–1318 (December 1967).

Smith, Gerald R., "Inadequacies of Research Proposals," *Lib. Trends*, **13**, 68–83 (July 1964).

Strunk, W., Jr., and E. B. White, *The Elements of Style*, Macmillan, New York, 1972.

Turabian, Kate L., *A Manual for Writers of Term Papers, Theses and Dissertations*, 4th ed., Univ. of Chicago Press, Chicago, 1973.

CHARLES H. BUSHA

RESOURCE SHARING IN LIBRARIES

Introduction

The March 1976 issue of *Advanced Technology: Libraries* reported that Berkeley and Stanford were discussing the establishment of a cooperative that would be broader in scope and somewhat different from the Research Libraries Group (Harvard, Yale, Columbia, and New York Public Library). The same issue announced publication of the second edition of the *Directory of Academic Library Consortia* (this directory lists more than 350 operating consortia, each with at least one academic member). In another part of the same issue, library networks and other on-line bibliographic cooperatives were urged to contact the author to ensure inclusion in *Library Networks 1976–77*.

Consortium, network, and cooperative—these are the terms used to label the organizational arrangements for achieving a variety of resource-sharing objectives. The number of such organizational arrangements increases through spontaneous responses to urgently felt needs.

One librarian expressed this need as follows:

> Powerful inflationary trends on the one hand, coupled with increasingly effective technological and resource-sharing capabilities on the other hand, are causing all

> academic research libraries to undergo a fundamental reassessment and reorientation of their traditional collection development goals and service strategies as they make the painful transition from the affluent sixties to the austere seventies and eighties (*1*).

The reassessment of traditional collection development goals entails a shift in philosophy from augmentation of local holdings to that of providing access to the holdings of others:

> With respect to the ways in which libraries are changing, let me point first to a principal intellectual difference in the understanding of what research libraries are and can be. Through all the centuries since the Alexandrian Library, the aim of librarians and the hope of scholars has been to amass in a single library all the resources for research in any branch of knowledge. Though this was always a chimeric notion, nonetheless, it has persistently seduced collectors and readers into pursuing unrealistic objectives and into making false assumptions as to the completeness of collections. This doctrine of self-sufficiency is finally coming to be realized for what it is: a will-o'-the-wisp. We are seeing at last the gradual abandonment of this creed, even for the very largest of libraries. That any library could provide all the resources for research required by its readers is now generally recognized by scholars and librarians, albeit reluctantly, as an unattainable aspiration.
>
> Accordingly, a sharing of holdings among libraries is increasingly accepted as an ineluctable necessity and as the only realistic means of providing the full range of resources needed for scholarly research. To be effective, it goes without saying that access to materials not available in one's own library must be reasonably quick and altogether reliable (*2*).

However, serious users of libraries are concerned lest resource sharing may inhibit scholarly pursuits. Concerns such as the following are voiced:

> If all libraries turn to resource sharing, none will have books to lend.
>
> If resource sharing proves unworkable, the library will be even further behind.
>
> The major defects of resource-sharing proposals are that the technology and organization structures are not presently available to provide a level of service comparable to that available today with existing methods.
>
> The cost of obtaining access to materials may sometimes equal or exceed the cost of purchasing the same materials for the local collection.
>
> Resource sharing will affect the economics of publishing by increasing unit pricing as library orders decline. A substantial part of the prospective savings from resource sharing will evaporate.
>
> The large library may become more and more a lender (rather than a borrower) of material, causing resource sharing to be a drain rather than a source of additional materials.

These concerns cannot be quieted by rhetoric alone—but there is no operating example of a resource-sharing network which provides access to materials as conveniently as a self-sufficient library. On the other hand, there is no example of a self-sufficient library which successfully provides for all the needs of all its patrons.

What, then, is resource sharing all about? What are the ultimate goals? How far along the way to achieving these goals have we proceeded? Which activities and developments appear to be vectoring toward viable resource sharing? How will we know when the goals have been achieved?

Definitions

The term "resource" applies to any thing, person, or action to which one turns for aid in time of need. When the term is used alone, it is not necessarily seen as implying reciprocity. The word "sharing" connotes apportioning, allotting, or contributing something that is owned, to benefit others. "Resource sharing" in its most positive aspects entails reciprocity, implying a partnership in which each member has something useful to contribute to others and which each is willing and able to make available when needed.

Resource sharing denotes a mode of operation whereby library functions are shared in common by a number of libraries. The goals are to provide a positive net effect: (*a*) on the library user in terms of access to more materials or services, and/or (*b*) on the library budget in terms of providing level service at less cost, increased service at level cost, or much more service at less cost than if undertaken individually. These goals should be realized without harm to the missions of participating libraries, although their methods of operation invariably must be adjusted. Similarly, the goals are realizable only with some changes in the habits of users.

It has been said that inflation and budget reductions are the primary forces that lead to resource sharing in libraries. But these are not the forces that make resource sharing work; they are only pressures that force consideration of problems and opportunities. The only approach that permits resource sharing to work is that which entails having resources to share, having a willingness to share them, and having a plan for accomplishing resource sharing—otherwise the concept is an empty one since help cannot be provided as needed.

The Resource-Sharing Process

A fundamental step toward resource sharing in libraries is to understand a basic resource that a library has to share—materials. Before considering what can be shared, however, it may be instructive to consider what cannot be shared: a book owned by a library that is needed frequently by users of that library is not fair game for sharing, since it would not be available locally when it is needed. It is only those materials that are not needed frequently that can be considered for sharing. This raises two questions: How frequently needed? and Why acquire those materials locally which are not likely to be needed frequently?

The answer to the first question needs to be negotiated, starting with some limiting parameters. It is probable that most librarians, clients, and administrators would

agree that a book used locally, say, daily, *should not* be shared; likewise, a book that is used only once in 5 years *could* be shared, especially if the mechanisms are assured for retrieving the book from elsewhere when it *is* needed locally. The negotiation comes into the picture when considering the largest number of materials, those that may be used locally within the very wide range of use examples posited above.

The second question is more difficult to answer, especially for research libraries which in the past were said to aim to acquire local holdings, typically, regardless of frequency of need (or use). Given this type of acquisitions policy, it becomes possible to share holdings *if* some advantages of sharing can be perceived by the library which holds the wanted materials. These advantages can be payment in kind (reciprocity) or payment in fact, which helps provide the financial wherewithal for the library to continue pursuing its acquisitions policy.

So far, sharing of library materials has dominated the discussion. In a sense, this is the most threatening part of resource sharing, since it entails movement of owned materials to another location, making them unavailable locally during the period(s) of use elsewhere. It is also threatening from another point of view in that effective sharing entails consideration of, and measurement of, use (and nonuse) of materials for which local funds have been expended. Libraries may feel exposed to criticism for using criteria other than "traditional economics" (i.e., extent of use as the only criterion) in making purchase decisions. Other threats arise from having to consider changes in traditional procedures, in making cooperative rather than idiosyncratic acquisitions decisions, and from the fear that expressing more modest objectives in collection size and growth may somehow compromise the image of "scholarly excellence" of both the library and its parent institution.

It should be less threatening to consider another important aspect of resource sharing, that involving bibliographic access to local holdings. In this case we are dealing mostly with services and processes, and physical materials need not necessarily be moved from the local environment. So, sharing in this sense entails providing other than local clientele the right to utilize the bibliographic tools (e.g., the catalog), thus permitting them to locate that which is held locally. Reciprocity—that is, bidirectional movement—is again needed if resource sharing is to be meaningful.

Still another aspect of sharing, also relating to bibliographic access, has become increasingly interesting as the labor of cataloging books which are acquired in many libraries (but are not necessarily available for sharing) is distributed rather than replicated, through shared cataloging.

Once material of interest has been located elsewhere, it becomes necessary to determine whether it is indeed available, or is in use by others. Resource sharing requires access to circulation information to avoid disappointment and to accelerate the process of locating the required material at still another library.

A next, basic step entails transfer of the desired physical material to the point of need. Resource sharing therefore involves establishing positive procedures for delivering materials, and for ensuring their return in a timely manner.

If resource sharing is to be deemed successful, all procedures must occur with sufficient speed so that the client has the desired material in hand well before the need has evaporated. It is here that the cooperative use of technology may become interesting.

There are other aspects of sharing to be considered, including agreements for implementing cooperation and the establishment of facilities for storing little-used materials. Given the maintenance of adequate use records, it becomes possible to arrange for cooperative decision making regarding selection of and storage location for those materials which, for example, may have "aged" to the point where further use is considered unlikely.

AGREEMENTS

There are several basic agreements among libraries that must be developed if a resource-sharing system is to be achieved.

First, obviously, is the agreement to share currently owned materials (that is, to permit access to the holdings among partners), with protocols, limitations, and priorities carefully spelled out. The agreement should provide for an independent administration of resource sharing, but one which does not emasculate the goals and missions of the cooperating libraries. Funding should be based on an obligation for long-term support to permit the benefits to develop; the financial agreement should permit individual libraries to withdraw, but be sufficiently constraining to avoid disturbance of the system.

Second, there should be agreement on acquisitions policies, both to ensure consistent development of holdings and to avoid redundancy when this is judged jointly to be unproductive.

Third, there should be agreement on bibliographic control. Best is standardization, so that users of each cooperating library have a consistent means of accessing the catalogs of others. If standardization is not feasible, then the second best is the provision of adequate training for users and/or access to the local reference staff to provide aid in locating materials.

Other necessary agreements include definition of loan periods and renewals, procedures for earlier return of materials if needed, payment for lost materials, and other "housekeeping" (or bookkeeping) chores.

BASIC RECORDS

Record keeping is at least as important in resource-sharing systems as it is in individual libraries acting alone. Sharing of materials entails sharing, in a formal and consistent manner, the records without which the system cannot operate.

First is the acquisitions policy, which must be reduced to writing in as much detail as possible. This is needed in order that others in the system can make effective (and efficient) predictions of whether other libraries will or will not acquire a given item. The experience in preparing desiderata and parameters for approval pro-

grams may serve as a workable model in this regard. Convenient access, in real time, to on-order/in-process records of resource-sharing partners and to union catalogs of their holdings can then help in the application of policy to individual selection decisions.

Once a positive acquisition decision has been made, the local on-order and in-process files must be accessible to others who may be making an acquisition decision to purchase the same materials. The same goes for access to holdings as represented by the catalogs of the cooperating libraries. It is useful to consider the feasibility of establishing a union catalog for the libraries and of keeping it up to date in order to make access more convenient for both users and library staff. The catalogs, whether individual or union, must have indications of library location and also any restrictions on use.

The client who has located material of interest must now know whether it is indeed available or whether it is circulating. In the latter case, the expected time of return must be known so that a decision can be reached as to whether the delay is acceptable or whether the holdings of other cooperating libraries should be addressed. The basic circulation files therefore need to be accessible; but it is typically not considered feasible to develop a union circulation file, since the cost-effectiveness of such a dynamic file is questionable.

Once a loan transaction has been completed, it is necessary to establish files, and also procedures for recall of materials and for dunning. If protocols are established for fines or other punitive methods for late return, or nonreturn, then appropriate files and procedures must likewise be established.

The files and procedures enumerated above provide the opportunity for analysis of usage and for making joint decisions on retirement of materials to a common storage facility. If such a facility is developed, then appropriate files and procedures must, of course, be developed.

TECHNOLOGY

Resource sharing makes more dramatic the need for maintaining careful records; but it makes more visible the added costs of increased traffic and transactions, if the system operates in such a way as to stimulate increased usage of collections.

For example, given the need to share data about acquisitions, holdings, interlibrary loan requests, and completed transactions—and to share these data over distances—the technology of computers and communications becomes dominant in the design and operation of resource-sharing systems. The primary records containing such data can be recorded in machine-sensible form to permit cost-effective transactions to be concluded; to permit ready analysis; and to support, with consistent and up-to-date data, decision processes that must be made in various geographic locations.

There is a whole spectrum of computers which can be considered for resource-sharing systems. Small, inexpensive computers (minicomputers) lie at one end of the spectrum, with much more expensive, large-scale computer facilities at the other

end. Frequently, libraries participating in a resource-sharing system may wish to consider introducing a low-cost minicomputer to support local library automation requirements. On the other hand, a larger computer may be attractive for the support of consortium requirements, with costs shared among the members. Careful analysis is needed to ensure that equipment choices for local and/or consortium requirements are reviewed carefully to assure compatibility. The variables involved in exploration of alternatives frequently are so involved that it becomes advisable to develop simulations of the resource-sharing activity before firm systems decisions are reached.

SYSTEM ALTERNATIVES

As pointed out earlier, there are several requirements that must be accepted as "given" if a full-service resource-sharing system is to be developed. These requirements include:

1. Multilateral decision making
2. Multidirectionality of service

These requirements lead inevitably to a decrease in local autonomy—with the consequent threat, in the minds of many. This threat can be decreased or eliminated only by formal and firm agreements by participants in a resource-sharing system.

Once these requirements are met, system alternatives present themselves which need to be understood and negotiated. One such alternative relates to choice of partners: Should they have similar or dissimilar clienteles? Other choices concern size of clienteles, size of budgets, and size of holdings: Should they be similar, dissimilar, or mixed? Also there is the question of budget assumptions to be made for each of the partners: anticipation of more? same? or less?

There are, of course, other alternatives to be considered: full service or limited function. In the latter case, one or more functions or operations may be chosen (e.g., shared cataloging, lending). Even for a full-service system the mix of partners may require consideration of a "star" system (one library with most of the resources) versus a "distributed" system (each library with equal, but different, resources).

SCHEMA OF A RESOURCE-SHARING SYSTEM

From the information given above it is possible to draw a simple schema of a resource-sharing system (Figure 1). In this drawing, limited for simplicity to two libraries, each has two "terminals," one each for users and for librarians. The user (1a, 1b) is able to access a "union data base" (2), which provides the catalog of the holdings of libraries A and B (with locations given for each item). If the desired material is not located in the union catalog, the on-order/in-process file (3) may then be accessed. If the desired item is located in a given library, the circulation file is consulted (6a, 6b) to determine whether it is indeed available immediately.

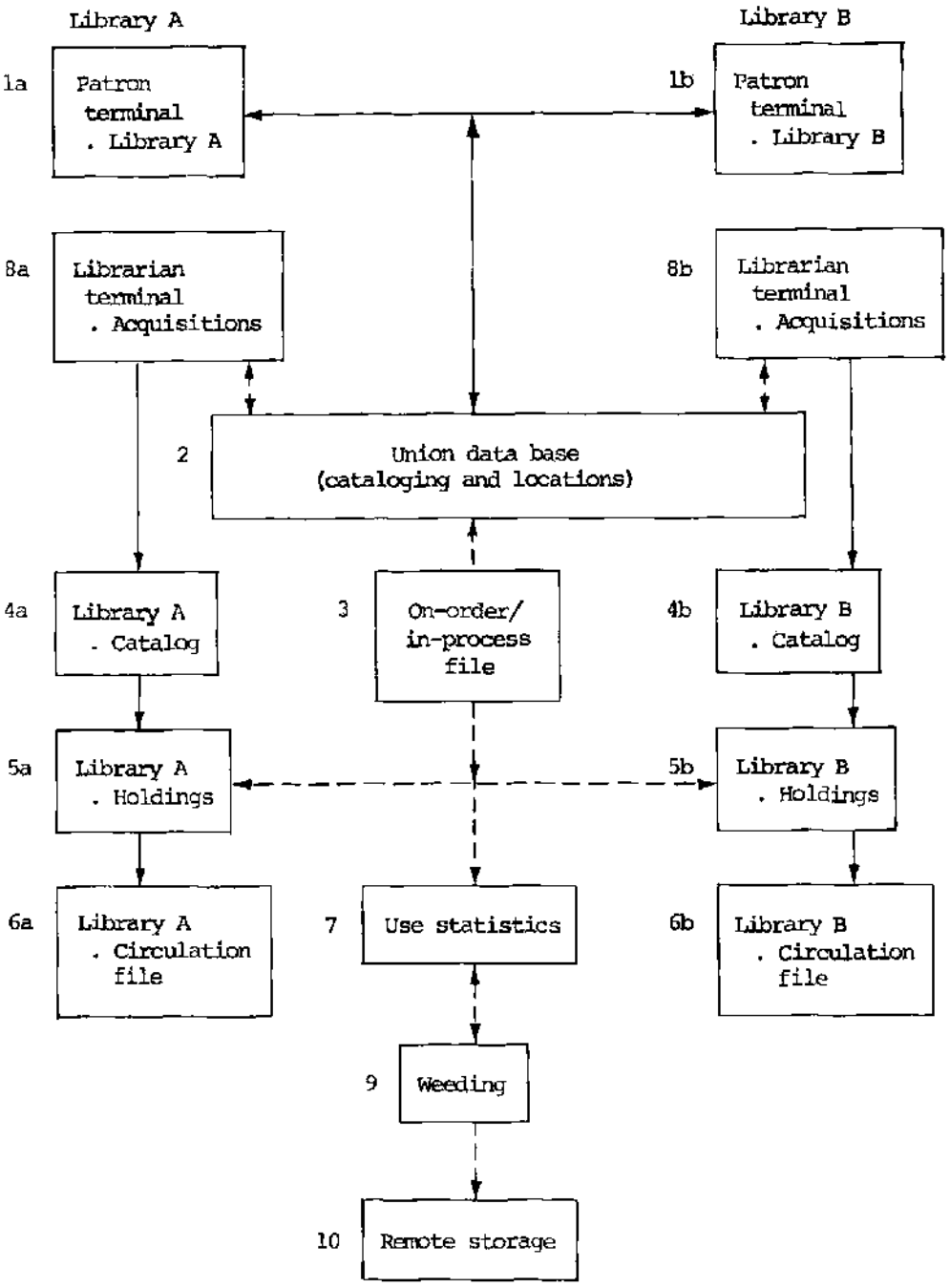

FIGURE 1. *Resource-sharing system.*

If it is available, a transaction is initiated to move the item to the point of need from the holdings of the other library (5a, 5b), with a record of the transaction maintained by the system (7).

An acquisitions librarian (8a, 8b) wishing to make a "buy/no-buy" decision

would likewise consult the union data base (2) and the on-order/in-process file (3) to determine the decisions of other libraries in the system. A "buy" decision would then lead to entering the transaction in the on-order/in-process file (3), to cataloging the item when it arrived, and to entering the cataloging (and location) information in the local catalog (4a, 4b) and in the union data base (2). The material itself would then become part of the local holdings (5a, 5b), ready for access.

Use statistics (7) would lead to weeding decisions (9) and consideration for remote storage (10).

BASIC DESIDERATA AND CRITERIA

The desiderata for consideration of resource-sharing partners can now be derived, once a given library has decided that it no longer can "go it alone." These are:

1. Collections useful to several institutions
2. Bibliographic apparatus (now available, or a willingness to develop them) which will be:
   a. accessible and addressable by several clienteles
   b. able to instigate delivery efficiently

In the "ideal" case, one may wish to use as the basic criteria for joining forces:

"Equal" distribution of unique resources

Willingness to engage in "enforceable" agreements

The most necessary criterion, however, is a library staff and a clientele willing to adapt to change. The ideal resource-sharing system requires that convenient access to bibliographic tools and materials be provided to patrons. The means by which such access is provided may well be other than customary ones. Accordingly, even in the ideal system, the librarian and the user will be obliged to unlearn old procedures and to learn new ones. This will require an understanding of the societal forces that make it necessary to be served in new ways, and participation in the consideration of trade-offs as libraries move into resource-sharing environments. Since these new environments will not, and cannot, be accomplished in a single dramatic happening, the librarians and the clientele will need to be willing to have changes occur over a period of time.

REALIZING THE GOALS

Given the increasing realization that self-sufficiency is unattainable, certainly for a research library, there is a consequent demand for the development of realistic, practicable, and acceptable goals which are in consonance with the current environment.

At any given budget level, the library must assign resources to each of three areas:

1. Acquisition of materials
2. The bibliographic apparatus to permit accessing the local holdings
3. The apparatus to access the holdings of others

The question is how much for each. The basic problem to be addressed is that of predicting need, or rather of forecasting need, if there are persisting trends whose direction can be plotted. Some such trends are cited in the literature: more than 50% of materials purchased for research libraries have never been used; 10% of uses of books acquired represent those "coming back to life" (that is, those not previously circulated at least once in the last 7 years); a small portion of any collection is in such heavy demand that these titles are unavailable when wanted (accounting for about 50% of the books requested from the library's holdings). These data, if confirmed in a local environment, can be extremely important in making purchase and/or resource-sharing decisions. In the purchase decision, the most critical case is not when a clear buy/no-buy judgment can be made. It is rather in the gray area, when there is uncertainty, that data such as these can be helpful, particularly when there is consideration of the subject-area/client data which may differentiate behavior and needs in different disciplines.

To reiterate, resource sharing denotes a mode of library operation whereby all or part of the library functions are shared in common among several libraries. The basic functions may be classified as acquisitions, processing, storage, and delivery of service. There is no single system currently in operation in which all of these functions are shared, although networks which might become "full service" (*all* functions to be shared) are coalescing in connection with several developing national systems. The dominant aspects of resource sharing to date have been in the areas of processing and delivery of service. There have also been significant activities in the areas of centralized storage and acquisitions. In addition, several commercial organizations offer bibliographic access, via national computer time-sharing systems to the journal and document literature of many disciplines.

One goal of resource sharing is to maximize the availability of materials and services at the minimal expense. The emphasis is on access rather than possession, although one does not exclude the other. As emphasized earlier, the fundamental premise is that no library can possess substantially all of the world's literature or any exhaustive part of it except in the most narrowly defined subject areas. The inability to possess it all in one place is accentuated by the exponentially expanding mass of printed material being produced and the increasing cost of acquiring any of it. An adequate concept of the expenses involved must also include personnel, space, processing, and maintenance costs. Nowhere in the library environment have budgets increased in recent years at a rate even close to the increase in these costs. The difference in incremental values between budgets and expenses is continuing to expand as libraries have moved away from the affluence of the sixties. The consequence is that even those budgets that are increased annually have significantly less buying power than their predecessors.

The availability of materials which resource sharing seeks to maximize implies certain trade-offs of time and accustomed ways of utilizing library material. There

is a delay in obtaining a particular item because it is not held locally, but the money saved from that nonacquisition could well represent an investment in access to a larger universe of material than the local library can afford. Availability through resource sharing also implies new ways of evaluating libraries and using the resources of recorded knowledge. A high volume count in a library is no longer judged by accrediting agencies as a significant measure of worth, but access is (*3*).

The effectiveness of resource sharing depends on the availability of appropriate communications, technology, and delivery systems. It has become a truism to say that the problems associated with resource sharing have more to do with behavior modification than with technology. The computer has been an extremely effective device for processing and locating materials quickly and conveniently regardless of distance. The delivery systems to date have relied mostly on mail service or private delivery systems.

The cost-effectiveness of resource sharing is diminished at present because it has to run in parallel with systems working toward self-sufficiency. As more integrated systems of resource sharing develop, more benefits will be realized from redistributed responsibilities and resources.

The formal cooperative efforts of the 1950s and 1960s known as resource sharing were born of a union between necessity and possibility. The technology was available to respond to the needs of the times. Government agencies, professional organizations, and individual institutions began to set standards and organize information networks. They found that certain functions, such as cataloging, could be done more efficiently in a central location, with the results distributed to participating institutions. They found that little-used research material could be acquired and stored in a central place and then distributed to interested scholars, thus freeing local space and budgets for more highly used materials. The computer proved to be a useful instrument for creating the indexes and catalogs so critical to providing access to growing amounts of literature in all fields. In the 1970s these institutions began to think that entirely new systems of information storage and retrieval should be organized, in which all library functions would be shared and not merely individual operations.

Although there is no operational example of a resource-sharing network which includes all possible library functions, there are now in existence so many cooperative resource-sharing activities and/or networks that it has become possible and instructive to classify them among a number of different dimensions, such as:

1. Functions performed
   a. acquisitions
   b. processing
   c. storage
   d. reference
   e. delivery
2. Type of library (e.g., public, school, college, special)
3. Subject matter (e.g., medicine, chemistry, social sciences)
4. Type of material (e.g., bibliographic data bases, journals, books)
5. Form of material (e.g., print, nonprint)

6. Nature of cooperative arrangement (formal vs. informal)
7. Means of financing
8. Degree of automation
9. Tax status (profit vs. nonprofit)

Two other dimensions of interest are distribution of resources and usage. Five resource distribution types can be identified:

1. Equally distributed networks—all participants hold equal (but different) quantities of material, to be utilized only by participants.
2. Star networks—one participant holds substantially all the resources, to be utilized by other participants.
3. Star networks with overlapping collections—several participants hold substantially equal quantities, with highly overlapping resources, to be utilized by themselves as well as by others.
4. Hierarchical networks—unsatisfied needs are passed along to the next greater resource center.
5. Mixed networks—combinations of the four network types listed above.

Usage distribution may be categorized along a continuum of low to high. The level of usage depends upon a number of factors, including:

Nature of the collection
Bibliographic access
Convenience of use (e.g., delivery time, ability to retain copy of material)
Fee structure

There are a number of constraints under which resource-sharing networks must operate:

1. Delivery time for remotely accessed materials exceeds that for locally held materials.
2. Materials loaned are not available for local access.
3. Browsing among collections is inhibited.
4. If all libraries depend on the holdings of others, there will be no substantial resources to share.
5. The sharing of resources may lead to institution of fees by copyright holders.
6. An unfavorable "balance of trade" may result in the subsidization of nonlocal patrons.

These constraints are present to some degree even when no resource sharing is undertaken. However, they are made explicit in a cooperative arrangement and therefore can be translated into design parameters for developing networks. Overcoming such constraints entails both technical solutions and behavioral adjustments, the latter being considered most difficult for the most experienced library users who are accustomed to relying chiefly on local resources.

There are a number of questions frequently raised about resource-sharing networks, such as:

1. Is browsing in a union catalog a reasonable substitute for browsing in a collection?
2. Do the advantages of access to extensive union catalogs of holdings outweigh diminution of local holdings?

3. Will reliance on resource sharing diminish emphasis on local collection building?
4. Will emphasis on resource sharing lead to substantial loss of irreplaceable materials?
5. Are current bibliographic tools sufficiently developed to permit widespread resource sharing?
6. Is current technology sufficient to support effective resource sharing in a cost-beneficial manner?
7. Will reliance on resource sharing lead to unacceptable losses of local autonomy?

Other questions have been raised which relate to costs, use measurement, etc.:

1. Can low-use materials be identified in advance of purchase?
2. Can past use serve as a predictor of future use?
3. Should factors other than use (that is, potential use) be considered in collections building?
4. Should *quality* of use be a factor in assessing effectiveness of an acquisitions program?
5. Are interlibrary loan costs greater than the cost of the materials themselves?
6. Should the cost of locally acquiring and storing little-used materials be shared by all local libraries, or only by those that wish to maintain these materials in readiness for potential future use?

In addition, there are some anomalies to consider:

Implicit in resource-sharing activities is the requirement to perform the network borrowing and lending transaction at a cost lower than that of local purchasing, processing, and lending. If the cost of the transaction is higher, then it is obvious that the item should have been purchased.

It is the nature of a research library that predictions can be made only that items will be used infrequently; generally the specific items cannot be identified. Accordingly, the question becomes: how many items must be purchased in order to increase the probability that a given item will be available when needed? Estimates vary from hundreds to thousands of items that must be purchased to reach an acceptably high probability of a single item being available.

Given the impossibility of self-sufficiency, the question is how to make second best work acceptably. There are four absolute requirements for acceptable operation of a resource-sharing activity:

1. Precise understanding of the use of the collection
2. Bibliographic apparatus capable of permitting adequate access
3. As rapid a delivery system as the clientele is willing to pay for
4. Delegation to a network authority of:
   a. Power to purchase in a coordinated fashion
   b. Administrative functions which assure consistent service

Reprise on Goals

The goal of resource sharing for libraries is idealistic, perhaps utopian—it entails providing convenient access to information (in whatever form and wherever

located) to library users (wherever located, and in whatever form they need for effective use). This goal could be achieved without resource sharing if the following conditions could be met:

1. If it were possible to guarantee local acquisition and appropriate organization of all available materials.
2. If it were possible to guarantee selection for local acquisition of those materials which are likely to be useful—and used.
3. If it were possible to guarantee that locally held materials were available when required.

Since none of these guarantees are possible unilaterally—unless budget restraints could be eliminated—it becomes necessary to consider multilateral actions, one of which can be labeled "resource sharing."

It is an obvious corollary that resource sharing cannot be accomplished unilaterally; rather it requires the concerted action of a number of libraries and it entails changes in functions and attitudes on the part of users, librarians, and administrators. Resource sharing typically entails the application of processes and technology which exceed the financial means of single libraries; it can be implemented only by groups of libraries, and probably only through nationally supported activities.

Epilogue

It has been said by a university librarian that networks as a replacement for resources have been oversold (*4*). The point that is made is that there is no substitute for having a large amount of material locally available, to permit the user to determine relevance and to provide steps to further information. The same librarian asks whether anyone could even dream of interlibrary loan supplying more than 1% or 2% of the books that flow in and out of a university library's doors every day—or even more than a tiny fraction of the ten times as many uses made of a library's resources within the library. The librarian decries all the talk on how networks can improve access—when, it would seem, 99% of the time is spent in talking about less than 1% of the library's business.

However, it is becoming apparent that libraries that purport to be building research collections are spending a very significant part of their acquisitions budgets in purchasing materials that are seldom, if ever, used. Thus the "less than 1% of the library's business" is costing a large percentage of the acquisitions budget. Therefore, a final goal for libraries, whether sharing resources or not, is to understand use as well as nonuse, in terms of the budgets assigned to each category (*5*).

REFERENCES

1. Richard De Gennaro (director, University of Pennsylvania Libraries), "The Libraries in Transition," *Almanac*, February 10, 1976, p. 305.

2. Douglas W. Bryant (director of Harvard University Library), "The Changing Research Library," in *The Library Scene*, September 1975.
3. Robert Kirkwood, "Resource Sharing and Accreditation," in *Resource Sharing in Libraries* (A. Kent, ed.), Dekker, New York, 1974, pp. 51–53.
4. Melvin J. Voight, "Investing in Network Services: How Far Can We Go?" *Lib. J.*, **101**(12), 1396 (June 15, 1976).
5. A. Kent and T. J. Galvin, eds., *Library Resource Sharing*, Dekker, New York, 1977.

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REVENUE SHARING AND LIBRARIES

The signing into law of the State and Local Fiscal Assistance Act of 1972 on October 20 of that year by President Nixon established the practice of a direct sharing by state and local governments in the proceeds of federal taxation. The act embodied a principle for which legislation had been sought as early as the 80th Congress (1947–48); it became a national issue with a serious attempt by Representative Melvin Laird (Republican, Wisconsin) to obtain revenue-sharing legislation in 1958, and it was proposed in no less than 155 separate bills of the 90th and 91st Congresses before becoming law (*1*).

The 1972 revenue-sharing act provided for the distribution of $30.2 billion to states, counties, towns, townships, Indian tribes, and Alaskan native villages during a 5-year period ending December 31, 1976. Advance funding was provided so that recipients were assured of funds during each of the 5 years. One-third of allotted funds was reserved for state governments, the remaining two-thirds were divided among units of local government according to a formula based on population, a general tax effort factor (states having a personal income tax received larger portions than those without), and the relative personal income within the units of government.

Restrictions on the use of revenue-sharing funds were few. Funds could be used for capital improvement or for operation and maintenance within the following eight broad priority expenditure categories:

1. Public safety, including law enforcement, fire protection, and building code enforcement
2. Environmental protection, including sewage disposal, sanitation, and pollution abatement
3. Public transportation, including transit systems, streets, and roads
4. Health
5. Recreation
6. Libraries
7. Social services for the poor and aged
8. Financial administration

The act also provided the following restrictions: (*a*) revenue-sharing funds may not be used to match other federal funds under grant programs; (*b*) no one shall be

denied participation in, or denied the benefits of, revenue-sharing-funded programs by reason of race, color, national origin, or sex; (*c*) local regulations governing the use of local funds must be applied to the expenditure of revenue-sharing funds; and (*d*) prevailing wage rules apply in construction projects involving more than 25% or $2,000 in revenue-sharing funds.

Two additional conditions applied. One was that recipient governments must indicate planned use of the funds prior to expenditure and report actual use following expenditure. The other was that planned and actual use of revenue-sharing funds must be published in a newspaper widely circulated within the geographic area of the recipient government. This provision was designed to encourage participation by the citizenry in the decisions on how revenue-sharing funds were to be used.

With payments made January 6, 1975, the Office of Revenue Sharing had made cumulative payments to recipient governments as follows (*2*):

States	$ 5,890,107,203
Counties	4,422,712,469
Municipalities	6,160,405,465
Townships	854,183,712
Indian tribes and Alaskan Native villages	20,812,719
Total	$17,348,221,568

General revenue sharing, with its few restrictions, was in contrast to an array of categorical aid programs which by 1971 had reached $30 billion (*3*) and which reserved much of the decision-making authority to the federal bureaucracy. Under the heading "Revenue Sharing, Returning Power to the People," President Nixon stated in his FY 1972 budget:

> We also found that the red tape involved in the narrow categorical grant system made it almost impossible for the federal government to be effective and responsive to the needs of individuals in different localities. . . . The results of grant programs have been impressive in some cases. But the grant structure has become a haphazard collection of hundreds of separate programs, each with its own requirements and procedures, and its own funding (*4*).

Library programs were among the categorical aid programs to which the president referred, and his budget for FY 72 reflected a proposed reduction of over $55 million for public library services, college library resources, librarian training, and educational broadcasting facilities, and the actual termination of the public library construction program (*5*). Each succeeding federal budget through FY 76 recommended diminished funding of these programs.

The Congress did not accept the president's recommendations to eliminate categorical aid for library programs. Table 1 shows actual appropriations for those programs during fiscal years 1972–1975.

President Nixon sought to reduce expenditures of FY 1973 funds appropriated for library programs by impounding $10,000,000 in school library resources funds

TABLE 1

Federal Aid to Libraries, Categorical Programs, 1972–1975*

Program	FY 72	FY 73	FY 74	FY 75
Elementary and Secondary Education Act				
Title II, School Library Resources	90,000,000	100,000,000	90,950,000	95,250,000
Library Services and Construction Act				
Title I, Public Library Services	49,568,500	62,000,000	44,155,000	49,155,000
Title II, Public Library Construction	9,500,000	15,000,000	0	0
Title III, Interlibrary Cooperation	2,640,500	7,500,000	2,593,500	2,594,000
Higher Education Act				
Title II-A, College Library Resources	11,000,000	12,500,000	9,975,000	9,975,000
Title II-B Library Training	2,000,000	3,572,000	2,850,000	2,000,000
Title II-B Library Research	2,750,000	1,785,000	1,425,000	1,000,000

* Data extracted from Ref. *6*

and $51,710,000 in Library Services and Construction Act funds, but suits against the federal government by a number of states brought release in 1974 of the funds so impounded. These events also triggered the enactment of the Impoundment Control Act of July 12, 1974, P.L. 93–344, which gave Congress a greater measure of control over impoundment and recision procedures.

The FY 76 federal appropriation for education, which projected library allotments similar to those of FY 75, was vetoed by President Ford, but the veto was overridden by Congress. Clearly, the Congress was not willing that revenue sharing should supplant categorical aid to libraries, even though executive budget requests consistently recommended eliminating or sharply reducing such aid. The FY 75 Executive Budget, for example, completely eliminated funding for Title II of the Elementary and Secondary Education Act and Titles II-A and II-B of the Higher Education Act, while also reducing Library Services and Construction Act Title I funds to $25 million and eliminating funding for Titles II and III (*7*).

The impact of general revenue sharing on libraries is not easily measured. The use of funds reported to the Office of Revenue Sharing by all units of government from July 1, 1973, through June 30, 1974, is shown in Table 2.

A total of $82.3 million for library programs in a single year appears at first glance to compare favorably with categorical aid. The problem is that it was possible for a local government to report an expenditure of general revenue-sharing funds under the category "libraries" without any library realizing an increase in the amount available to it from local government sources. Revenue-sharing funds were, in short, frequently used to replace rather than to supplement appropriations to libraries by local governments.

Eileen D. Cooke, associate director of the American Library Association, made the following statement on March 20, 1975, in testimony before the Subcommittee on Labor–HEW Appropriations of the House Appropriations Committee:

> Although the State and Local Fiscal Assistance Act (General Revenue Sharing) is not among the programs for which this committee is responsible, we would like

TABLE 2

Use of Revenue-Sharing Funds, 1973-74*

Use category	Total amount expended (in millions)	Percent of total
Public safety	$1,534.9	23%
Environmental protection	486.5	7
Public transportation	987.8	15
Health	477.1	7
Recreation	307.5	5
Libraries	82.3	1
Special services for poor and aged	261.9	4
Financial administration	136.4	2
Multipurpose/general government	639.3	10
Education	1,381.3	21
Social development	12.8	—
Housing/community development	75.3	1
Economic development	37.3	0.6
Other	253.2	4
Corrections	43.2	0.6
Total	$6,716.9	

* From Ref. *7*; columns do not total due to rounding.

> to comment on its impact upon public library programs. We have asked all the States to inform us of any use of GRS funds for library purposes. To summarize the preliminary information that has come to us so far, only about 14 percent of the nation's public libraries have received GRS funds. The great majority of public libraries have not been touched by GRS. Among governmental units that have provided GRS for libraries, there appears to be a growing tendency to use GRS dollars to replace local or State funds previously provided for library support. . . . We noted the recent testimony of Office of Education witnesses before this Committee, which cited the assistance provided libraries by GRS as one of the reasons the Administration now offers for justifying its proposed phase-out of the Library Services and Construction Act. We are distressed by this line of reasoning which simply cannot be sustained on the basis of the facts available to date (*8*).

A survey conducted by the State Library of Pennsylvania in the summer of 1975 substantiated Miss Cooke's statement (*9*). It showed that 139 of the 450 public libraries of that state reported having received a cumulative total of $16,665,125 in general revenue-sharing funds up to July 1, 1975; but $10,759,772 of that total was needed by the libraries receiving it just to remain at the 1971 level of support, the last year before revenue sharing. Only $5,905,353 of the total revenue-sharing funds that libraries received could be called "new" money. A Wisconsin survey brought even more discouraging results. In that state only 25 of the state's 299 libraries responding to the survey reported receiving revenue-sharing funds. In 1974 they received $1,301,433 in such funds, but all except $19,389 merely replaced local appropriations (*10*).

The National Commission on Libraries and Information Science stated in its 1973–74 report that:

> In its efforts to work towards improved library and information services, NCLIS has closely monitored changing library funding patterns including revenue sharing. Recent reports including studies of U.S. Department of Treasury and other government organizations and professional associations indicate that libraries are last in funding among the eight priority areas eligible for general revenue sharing. Though individual libraries have benefitted from revenue sharing, the overall funding pattern has provided only a small fraction of the amounts available in earlier years from categorical funds (*11*).

Of the $82.3 million in revenue-sharing funds available to libraries in 1973–74, $30.5 million was expended for capital improvements to libraries (*12*). This figure falls short of the $40 million allotted under Title II of the Library Services and Construction Act during the peak year of FY 1967.

State governments, not bound by the eight broad priority expenditure categories which applied to local governments, spent only $6.3 million of their revenue-sharing funds on libraries (less than 1%), and 90% of that sum was for capital improvements (*13*).

By mid-1975 a number of studies had been completed or were in process to evaluate the impact of general revenue sharing on government, the economy, and society (*14*). Allan D. Manvel, writing on its fiscal impact, said: "It will be a long time before data needed for sophisticated efforts to measure the program's impact can be applied" (*15*). Data were also lacking for careful evaluation of revenue sharing effects on library programs. A note in *American Libraries* in May 1975 pleaded: "Help! More information is urgently needed on the impact of general revenue sharing on library service throughout the United States. This is particularly true now that Congress is beginning to talk about amendments and extension of the State and Local Fiscal Assistance Act, P.L. 92–52 (General Revenue Sharing) which expires in 1976" (*16*).

President Ford began presenting his case for renewal of the Revenue Sharing Act early in 1975 with his message to Congress on April 25, in which he said:

> I strongly recommend that the Congress act to continue this highly successful and important element of American Federalism well in advance of the expiration date, in order that state and local governments can make sound fiscal plans (*17*).

The president proposed several changes to the original act. One was to strengthen the enforcement of the nondiscrimination provision of the act by authorizing the withholding of funds due a government where discrimination has been found to have occurred. Another was to strengthen public participation in decisions on how to expend revenue-sharing funds by requiring recipient governments to provide a procedure for citizen participation in the allocation of funds. In addition, reporting requirements were to be made more flexible, and reconsideration of the program was to occur 2 years before the new act's expiration (*18*).

The Ford renewal proposal sought to correct several criticisms of the revenue-

sharing program. These were voiced by Senator Edmund Muskie (Democrat, Maine) during a hearing before the Senate Subcommittee on Intergovernmental Relations on July 23, 1975. Referring to a year-long study that had been done by the General Accounting Office, the senator said that there was detailed evidence of underrepresentation of women and minorities in local government employment and that the studies showed "unequivocally" that revenue sharing had very little impact on local budgeting processes; citizen participation in decisions had not increased. He also called attention to the fact that despite revenue sharing, the large cities continued to face serious fiscal problems (*19*).

The Library Services and Construction Act, in contrast, required that priority attention be given to the needs of minority groups, and that the annual and 5-year plans mandated for State Library agencies administering the act be developed with the assistance of advisory councils representative of users and different types of libraries.

Neither general revenue sharing nor the Library Services and Construction Act, however, answered directly to the special problems faced by the large urban libraries. As renewal of both acts was being discussed in 1975, the Urban Libraries Trustees Council, a group formed in 1971 to seek relief from pressing fiscal problems, was proposing federal legislation to provide per capita, ongoing, no-strings aid for public libraries (*20*).

The political appeal of revenue sharing was surely a factor in congressional consideration of the act. Michael D. Reagan expressed it as follows:

> The primary argument now—and it is likely to be a successful one—is the bread-and-butter political one: governors, mayors, city councils, and the appointed officials who help spend the money all enjoy receiving the quarterly checks. . . . A large number of local jurisdictions are being pleasantly surprised to discover that their shares are large, relative to their existing budgets and needs, and can therefore be devoted to one-time special capital projects. This is a delightful situation for any politician of course, thus the city fathers of hamlets, villages and small towns are now the supporters of revenue sharing as a bulwark of localism—and these small towns are still a most salient factor in the political lives of Congressmen (*21*).

Public Law 94–488, October 13, 1976, amended the State and Local Fiscal Assistance Act of 1973 and extended it until September 30, 1980. The amended law eliminated the priority expenditure categories which had included libraries as a priority. It also removed the restriction on the use of revenue-sharing monies as matching funds for other federal grant programs, and added a requirement that recipient governments hold hearings on the use of revenue-sharing funds before adopting budgets.

In summary, the impact of general revenue sharing on libraries during 1972–1975 could not be fully evaluated because detailed data were lacking. Indications were, however, that: (*a*) most of the funds reported as having been spent for libraries were in fact replacement of local funds rather than additions to them; (*b*) when revenue-sharing funds supplemented local appropriations, they were often

used for capital improvements rather than for new programs; (*c*) revenue sharing was popular with local governments because it reduced the necessity for new local taxes; and (*d*) revenue sharing did not supplant categorical aid programs, as the Nixon and Ford administrations had planned.

REFERENCES

Publication details for those items listed in short form are given in the Bibliography.

1. Will S. Myers, "A Legislative History of Revenue Sharing," in *Annals*, American Academy of Political and Social Science, May 1975, Vol. 419, pp. 1–3.
2. National Science Foundation, *General Revenue Sharing: Research Utilization Project Volume 2*, p. 141.
3. Michael D. Reagan, *The New Federalism*, p. 56.
4. *The Budget of the United States Government, Fiscal Year 1972*, p. 11.
5. Ref. *4*, p. 312.
6. *The Bowker Annual of Library and Book Trade Information: 1972* through *1975*.
7. U.S. Department of the Treasury, Office of Revenue Sharing, *General Revenue Sharing: Reported Uses 1973–74*, p. 42.
8. U.S. House of Representatives, *Hearings Before a Subcommittee of the Committee on Appropriations*, p. 402.
9. Unpublished survey by the State Library of Pennsylvania, Harrisburg.
10. "Revenue Sharing in Wisconsin," *Lib. J.*, **100**, 809 (May 1, 1975).
11. National Commission on Libraries and Information Science, *Annual Report 1973–74*, U.S. Government Printing Office, Washington, D.C., 1975, p. 31.
12. Ref. *7*, p. 35.
13. Ref. *7*, p. 36.
14. The National Science Foundation, for example, summarizes 69 national, regional, and state individual studies of revenue sharing impact in its report *General Revenue Sharing: Research Utilization Project Volume 2*, pp. 109–130.
15. Allan D. Manvel, "The Fiscal Aspect of Revenue Sharing," in *Annals*, American Academy of Political and Social Science, May 1975, Vol. 419, p. 36.
16. "Revenue Sharing Mystery Deepens: Is It Old Money or New?" *Amer. Lib.*, **6**, 279 (May 1975).
17. Gerald R. Ford, *Renewal of General Revenue Sharing*, Message to Congress, April 25, 1975, p. 1.
18. Ref. *17*, pp. 4–5.
19. U.S. Senate, *Revenue Sharing, 1975, Hearing Before the Subcommittee on Intergovernmental Relations . . .*, p. 2.
20. "ULC Proposal Is Focus of D.C. Meet," *Lib. J.*, **100**, 1374–1375 (August 1975).
21. Michael D. Reagan, "The Pros and Cons Arguments," in *Annals*, American Academy of Political and Social Science, May 1975, Vol. 419, pp. 24–25.

BIBLIOGRAPHY

Advisory Commission on Intergovernmental Relations, *General Revenue Sharing: An ACIR Reevaluation*, U.S. Government Printing Office, Washington, D.C., 1975.

American Academy of Political and Social Science, "General Revenue Sharing and Federalism," *Annals*, Vol. 419, May 1975.

The Bowker Annual of Library and Book Trade Information, 1972 volume et seq., Bowker, New York, 1972–.

The Budget of the United States Government, Fiscal Year 1972 and subsequent years.

Dommel, Paul R., *The Politics of Revenue Sharing*, Indiana Univ. Press, Bloomington, 1974.

Ford, Gerald R., *Renewal of General Revenue Sharing*, Message to Congress, April 25, 1975, U.S. Government Printing Office, Washington, D.C., 1975.

"Libraries' Share of Revenue Sharing Bucks," *Wilson Lib. Bull.*, **49**, 622–623 (May 1975).

National Academy of Sciences, *Revenue Sharing and the Planning Process: Shifting the Locus of Responsibility for Domestic Problem Solving*, The Academy, Washington, D.C., 1974.

National Science Foundation, *General Revenue Sharing: Research Utilization Project Volume 2*, U.S. Government Printing Office, Washington, D.C., 1975.

Reagan, Michael D., *The New Federalism*, Oxford Univ. Press, New York, 1972.

"Revenue Sharing Mystery Deepens: Is It Old Money or New," *Amer. Lib.*, **6**, 278 (May 1975).

U.S. Department of the Treasury, Office of Revenue Sharing, *General Revenue Sharing: Reported Uses 1973–74; a Tabulation and Analysis of Data from Actual Use Report 4*, U.S. Government Printing Office, Washington, D.C., 1975.

U.S. House of Representatives, *Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives*, 94th Cong., 1st Sess., U.S. Government Printing Office, Washington, D.C., 1975.

U.S. Senate, *Revenue Sharing—1975: Hearing Before the Subcommittee on Intergovernmental Relations of the Committee on Government Operations*, 94th Cong., 1st Sess., July 23, 1975, U.S. Government Printing Office, Washington, D.C., 1975.

Wright, Deil S. et al., *Assessing the Impacts of General Revenue Sharing in the Fifty States: A Survey of State Administrators*, Univ. of North Carolina, Chapel Hill, 1975.

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REVIEWS AND REVIEWING

Information on various areas of literature reviews and reviewing is presented in the following series of five articles. The contents are:

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INTRODUCTION

Any discussion of reviews and reviewing must first attempt to define reviews and the reviewer's role in the reviewing process. There is some disagreement as to a

review's primary purpose; some maintain that it is for selection, others that it is literary criticism, and still others believe that it should serve both purposes. The role of the reviewer, according to Virginia Woolf, is "partly to sort current literature, partly to advertise the author, partly to inform the public" (*1*). If this definition is accepted, then it follows that the primary role of the review is to place the generic book before the reading, listening, viewing public; because "current book reviewing is still the basis of most of our current book knowledge and our immediate judgement concerning contemporary literature" (*2*).

History

The review is a relatively new phenomenon, having come into existence with the newspaper. Printed criticism began, presumably in a crude and primitive form, in the 17th century. However, long before that time oral criticism had been introduced. On the Athenian stage, Aristophanes' comedy *The Frogs* dramatized a critique of Aeschylus and Euripides. This "review par personnage" had the spoken word in common with today's radio broadcasting of book reviews (*3*). During the 17th century scholarly book reviewing began in the form of book notices, which acquainted scholars with the work of their colleagues (*4*). This was started in a very brief form with the creation of the French periodical *Journal des scavans* in 1665, in which most of the reviews were descriptive. The critical review art form reached its peak in England during the age of Enlightenment. However, toward the end of the 18th century there was a change—the body of criticism then seemed to split into two parts (*5*). These were (*a*) literary criticism and (*b*) reviewing. The critic dealt mainly with the past, while the reviewer took up the cause of new publications as more subject journals began to appear. During the 19th century the reviewer "had considerable power over the author's sensibility; and upon the public taste. He could hurt the author; he could persuade the public either to buy or to refrain from buying" (*6*).

The 19th-century history of reviewing was ushered in with the founding in 1802 of the *Edinburgh Review and Critical Journal*, which "gave vigorous and independent notice to the important books of each season" (*7*). *Blackwood's Magazine* and *The Quarterly Review*, two independent reviewing magazines, soon followed. Not too much later the *North American Review*, founded in 1815, introduced book reviewing into its columns. These journals were followed in both England and the United States by outstanding magazines such as *Saturday Review*, *Spectator*, *Athenaeum*, *Nation* (London), *Nation* (New York), *Dial*, and *Bookman* (New York). They were soon joined by several journals which reviewed not only adult books but also children's materials. According to Darling a large number of reviews of children's books were appearing in many journals in the 1860s. Among those publications which are still in existence are: *The Nation*, *Atlantic Monthly*, and *Harper's* (*8*).

Most of the early reviewing publications were either monthly or quarterly, but

these were soon joined by weekly and daily newspapers which included reviews in their features. The *New York Times* was the first of the "current" newspapers to include reviews, starting in 1896. These early reviews provided no real basis for selection and were not intended as buying guides. The American Library Association began the *Booklist* in 1905 as the first publication in the United States which had as its primary aim the reviewing of books, principally for the buying public.

Reviews in the past, according to Haines:

> were apt to take the guise of long, comparative articles, analytical and descriptive, conveying ethical homily or political polemic. In the great English quarterlies a hundred years ago famous reviewers volleyed and thundered against writers of opposed political faith, or vied with one another in the ferocity of their attack upon books they found unpleasing. . . . The cruel ridicule, the savage, reckless condemnation, that made the "scorpions" of the *Edinburgh Review* famous in its early days, that was rampant in the mighty battles between the *Edinburgh* reviewers and their hated rivals of *Blackwood's Magazine* was, in lesser measure, common to much current English literary criticism until the mid nineteenth century (*9*).

Reviews have continued to develop over the years, perhaps becoming less critical and more descriptive, but probably infinitely more humane than the devastating pronouncements in the 19th century. Current reviews reflect the state of a postindustrial society with tremendous increases in book production, the introduction of nonbook materials, and a greater number of reviewing media.

A Current Overview

Reviews of materials are used by librarians and media specialists as buying guides for all types and sizes of libraries and media centers, and also by teachers, scholars, and the general public in their individual viewing, listening, or reading development. Besides acting as selection tools, reviews provide a certain familiarity with many materials which an individual might never have the opportunity to see, hear, or read. In this sense, they should be thought of as one way of broadening one's basic education. Only in recent years have reviews of multimedia materials begun to appear in some library-focused reviewing journals and in specialized journals. Previously, almost all reviews were of "books." Reviews, in a variety of reviewing media, vary greatly, from extensive scholarly treatises to very abbreviated comments by nonauthorities, to promotional statements used by publishers to sell their merchandise. There have been as many variations of criteria developed for reviewing, or lack thereof, as there are reviewing sources. The lack of consensus about functions and criteria has encouraged great disparity in reviewing.

To cover every reviewing medium and every specialized area of reviewing in this series of essays would be an impossible task, therefore it would seem most appropriate to limit discussion to types of materials being reviewed. The articles cover, in addition to the historical aspects, reviews and reviewing as they relate to:

1. General reviewing sources
2. Materials of interest primarily to librarians, media specialists, and information scientists
3. Multimedia materials
4. Scientific and technical materials
5. Materials relating to children's literature

Specific discussion of oral reviewing is not included here, although that type of reviewing has a similar intent but is provided through such channels as spot announcements on local radio or television stations, as programs for club groups, or as part of a lecture circuit, rather than in written form.

The terms "review" and "literary criticism" are often used synonomously; however, subtle differences have developed, with criticism forming but one subset of the review process. Drewry writes that in a "criticism," the emphasis is on the reviewer and on his reaction to and evaluation of the book, what he thinks about the subject, and what he knows on this theme which the author may or may not have included, intentionally or unintentionally (*10*). Literary criticism often is concerned with a group of writers all writing on a given subject or during a given period of time, or with the entire works of a single author, or in some instances with an individual work. In any case, a literary criticism generally assumes that the reader is familiar with the works being discussed. This distinction cannot always be made because, for instance, scholarly reviews often combine several titles in one review and assume the reader's familiarity with the topic being discussed. A criticism often deals with works which have been published for some length of time, and therefore the immediacy factor, which is so important to the review, is not a consideration. Such critical examination usually points out the excellence or defects of the works being judged. Reviewing is intended primarily to inform through explanation and interpretation and is more practical; whereas criticism is intended to edify. This is not to indicate that a review does not include critical comment, but this is only one important aspect of the review.

Reviews seem to fall into three broad categories: those that are strictly descriptive and are most often issued by publishers as selling devices, taking the form of short notices; those few that are evaluative only and border on literary criticism; and those which are a combination of the first two and which are the most common type of reviews. It can only be assumed that reviews by authorities or professional reviewers, because of the combination of evaluative and descriptive elements, have more influence on the buying public than publisher's blurbs or advertisements, although publishers often do include positive excerpts from reviews in their announcements. Certainly the authority of the reviewer is most important in nonfiction areas. In those areas reviewers should be thoroughly acquainted with the subject of the material being reviewed so that the review can be as authoritative and objective as possible. According to one source, "the fairest review of a specific book (or other medium) is likely to be written by an authority who knows the literature in the field but is not working the very same vineyard" (*11*). The reviewer, unlike the critic, has little to say to the author, but is rather addressing his or her

remarks to the reader. The reviewer is the link between the author/publisher and the purchaser/reader. Therefore any criticism which is made is aimed at the book, film, or other medium, rather than at the author per se.

A review generally deals with a work which is reasonably recently off the press. Most reviewing sources, as a matter of policy, do not review older works or reprinted or reissued works. Timeliness of the review, particularly in some scientific and technical fields, is a very important aspect. However, rushed reviewing, for timeliness, can and often does lead to superficial reviewing. There is some criticism that generally too much time elapses between the time that the material is issued and when it is eventually reviewed. One study found that for 7,476 reviews studied, an average of 6 months had passed, with fiction and juvenile fiction taking only 1 month and psychology taking up to 20 months. The study also found some evidence to suggest that general periodicals do their reviewing more promptly than professional journals (*12*).

Since one must assume that the reader has not yet read, seen, or heard the work in question, the reviewer, unlike the literary critic, must present the reader with those facts necessary for that reader to make a value judgment. Reviewers therefore must attempt to make a synopsis before they can leave any impression concerning their judgment as to the quality of the work being cited. The reviewer does not necessarily know his or her audience, is usually working under the pressure of a deadline, and often times is limited by space available in the journal or newspaper for the review.

There is some debate as to whether reviews have any influence on actual sale of materials. Although some materials of poor quality are consciously not reviewed at all by some sources, they are occasionally reviewed. There is much debate as to whether a negative review is better than no review at all, and indeed, whether materials which would presumably receive poor reviews should be reviewed, since reviewing an item brings it to the attention of an audience. On the other side of the argument, there is some evidence that reviews vary so greatly that one can always find a positive review to counterbalance a negative one. If this is true it would appear that sales of materials are unaffected by their quality and perhaps also unaffected by the reviews. Studies have shown that in almost all fields there are more positive reviews than negative ones. Merritt, in his study found that of 5,997 reviews in his sample, 66% were favorable, 21% were unfavorable, and 13% were noncommittal—which seems to substantiate a complaint that reviews are "a chorus of praise" (*13*). This trend is further confirmed by another study which found 68.3% of the reviews were favorable; 18.2%, unfavorable; and 13.5%, noncommittal (*14*).

Considering the increase in publications, and the still limited number of reviewing sources, it is clear that not every work can be reviewed and that a choice must be made. This choice is most often made by editors of the reviewing media. However, certain books—those of special interest and those by prominent authors—will almost always be reviewed in at least one reviewing source. The importance of the reviews in the selection process for libraries has been magnified in recent years by inflation in the cost of materials, by the increase in the publication of mono-

graphs and other media materials, and by the leveling off of funds allocated for purchasing materials by all types of libraries. At the same time, because reviews are shorter and more numerous than they once were, their value may have decreased. Some criticism of the reviewing process indicates that too often reviews are more descriptive than evaluative, more positive than negative, and—at least in certain fields—more likely to be based on the friendship of the author and the reviewer than on the merit of the work being reviewed. All of this has happened despite the fact that libraries, with tightening budgets, have become more aware of the need for critical evaluations of materials. Certainly there are outside pressures from publishers, editors, and authors which may have some bearing on the reviewing process. Too, if the reviewer is also an author there may be some fear of retaliation.

Reviewers are most often chosen by editors for their interest or expertise in certain areas, and most reviewing media develop a cadre of individuals who review for them. It is estimated that about 10% of the commissioned reviews in the social sciences are never completed (*15*). This is a fair estimate for all other areas as well. Some of these reviewers may be professionals whose primary income is derived from reviewing. Others, particularly those who review in scholarly publications, review more for professional development. But the background, interests, and expertise of reviewers vary greatly. Many reviews, particularly those appearing in weekly newspapers, are written by people who are less than authorities in the field of the work. Helen Haines called such reviews productions of "literary aunts" of the editor who runs the local agricultural weekly. Despite the fact that these individuals may not be professional reviewers, the reviews themselves are influential because materials are being brought to the local readership's attention and will very likely be asked for in local libraries. Other reviews may be of the following forms: "compact, lively summary of the experienced journalist, turning his hand to any odd job; the magisterial pronouncement of self-conscious youth serving a novitiate in 'literary work'; or the thoughtful, balanced, responsive utterance of the competent professional reviewer" (*16*). Peyre describes one category of reviewer:

> . . . unlike these two groups of writers on literature, the theoreticians and the reappraisers of the classics, who have world enough and time, and who publish their leisurely essays when and as they wish (their main source of income is usually derived from some other profession), book reviewers are pursued by deadlines. They are not free to expand their judgments or to expand their theories apropos of the new book, treated as a text or as a pretext. Space is limited to so many words; quotations are frowned on; obscure or overly literary language is taken to be a pedantic effort to puzzle the average reader . . . (*17*).

Materials being reviewed are assigned space in the publication in a number of ways. Some are alphabetical by author, some by subject arrangement; some are by what the editor judges as the most important or respectable, and some are given priority on the basis of their expected circulation. In scholarly publications, works may be reviewed and receive priority listing based on the editors' determination of

significant contribution. It has been stated that very often those reviews that are placed first in some types of reviewing journals "coincide rather embarrassingly with the amount of advertising space purchased by the publisher of the book" (*18*). Priority is also assigned to new materials by most reviewing sources. According to a study of the reviewing sources in the professional fields of cultural anthropology, economics, history, political science, psychology, and sociology, new books are the highest priority for editors of journals. Within that category books are chosen which are most relevant, are written by well-known authors, and are scholarly or serious works as determined by the editors. A similar study in the fields of education and selected disciplines in the humanities (English, philosophy, art and classics) confirmed the same criteria (*19*).

Reviews are found in a number of different sources which fall into the categories of: (*a*) special and general book-reviewing journals whose primary aim is to review materials, such as *Choice*; (*b*) general monthly and weekly periodicals whose primary focus may be current events or feature articles but which also have a section of book, record, and film reviews, such as *Time*; (*c*) special subject periodicals or literary magazines with book reviews included, such as *Yale Review*; (*d*) newspapers, which are daily, weekly, or Sunday, and which include reviews in all or some of their issues, such as the *Boston Globe*; and (*e*) commercial catalogs and publications which are of a more promotional nature, such as *Book News* by Bro-Dart.

According to Haines, "the best reviewing is found in a few periodicals that are entirely devoted to literary criticism and in the review columns of periodicals of general or specialized interest. Reviews in professional and trade periodicals are usually limited to books that relate to subjects with which the periodical is concerned" (*20*). However, there does not seem to be that much distinction between reviews which appear in popular magazines and reviews which appear in newspapers, and these differ scarcely at all from those which currently appear in literary journals.

Another major issue facing reviewing sources is whether the review should be signed. On the one hand, the argument is that by remaining anonymous, the reviewer can be more objective without threat of reprisal and without his or her name being used in the marketplace to sell copies. On the other hand, many feel that a reviewer should be prepared to defend his or her criticism in an open forum.

General Reviewing Sources

American and English periodicals and newspapers, except for scholarly magazines, seem to review mostly English-language materials, with the bulk of foreign materials being reviewed only when they have been translated. This trend does not hold true for films or recordings because many of those reviewed are foreign-produced.

The following discussion is intended to illustrate some of the points made earlier

about reviewing. There is no attempt at comprehensiveness in these remarks, but rather titles are cited as representative (and in some cases outstanding) examples of certtain categories of reviewing media. International aspects of this topic are covered, to an extent, in this encyclopedia in other articles on libraries and book trade in various countries, or by specific titles of journals.

Good examples of current literary criticism, as opposed to reviewing, can be found in *Essays in Criticism*, in which all the reviews are commissioned from literary critics. There is usually quite an interval between publication of material and the time the critical review finally appears. Indexing of reviews for materials is one peculiar spin-off of the review process. Reviews are indexed through periodical indexes such as *Library Literature*, *Education Index*, *Library and Information Science Abstracts*, etc. Sections of these sources are set aside for indexing reviews which have appeared in other media. Sometimes reviews are indexed separately in a journal or a newspaper such as the *Times Literary Supplement* or the *New York Times Review of Books*, which have separate indexes that indicate the date they reviewed a particular item. There are also several separate indexing services which publish book/media reviews, such as *Choice*, *Booklist*, and *Previews*. *Book Review Index* is a unique index to reviews of current fiction and nonfiction which appear in at least two selected periodicals. For inclusion in that source, materials must be published or distributed in the United States. Discussion of specialized subject coverage reviewing journals such as *Bookbird* for children's literature, *New Technical Books* for scientific and technical materials, and *Previews* for films is included in other articles in this series.

Probably the most important general reviewing publication in the United States is the *New York Times* and its *Times Book Review*, which weekly reviews about 20–30 books. These reviews are done by authors and scholars and serve as a major reviewing source. Other media, film and record among them, are also reviewed in this newspaper, as in most other large, well-established newspapers which have book, music, and film editors whose reviews appear at least weekly, usually in the Sunday edition. A list of those newspapers would include the *Washington Post*, the *Boston Globe*, the *Chicago Tribune* with its Sunday section called *Book World*, and the *Los Angeles Times*, to mention only a few. A major foreign English-language newspaper which has special reviews is the *London Sunday Times*, whose *Times Literary Supplement*, started in 1902, reaches a large audience in the United States and Canada as well as in Europe and other parts of the world. Many feel that this is the best reviewing medium in English, its unsigned reviews being scholarly.

Among the weekly popular news/views-type publications, a number carry reviews of books, films, and records, *Time* and *Newsweek* being the two best examples of those which carry signed reviews. Another weekly news/political opinion journal which is more authoritative and scholarly in approach and which includes extensive signed reviews on about five titles each week is *The Nation*. An example of the weekly literary review magazines which carry essay-type reviews is the *New Yorker* (these include very few titles each time and many of the items are quite delayed in being reviewed). Monthly publications which include extensive reviews

of music, film, and books are the *Saturday Review*, *Encounter*, and *Esquire*. *Harper's* and *Atlantic Monthly*, both dating from the 1850s, contain reviews, but they are more limited in their coverage than are the previously named monthlies.

Special interest journals such as *Fortune* (in the area of business and general topics) and *Scientific American* carry a major signed book review in each issue. There are many special interest journals which include extensive reviews of materials for their specialized clienteles.

Most literary journals include critical reviews along with their short stories, poetry, and other features. Perhaps the best known, and a representative listing of this type of reviewing source are: the *Antioch Review*, the *North American Review*, *Swanee Review*, *Southern Review*, *Virginia Quarterly Review*, and *Yale Review*. All of these are quarterly journals which include extensive, critical, signed reviews.

In the area of general reviewing of books (other than the *New York Times Book Review*), two outstanding examples can be given. The *New York Review of Books* is one strictly reviewing publication which prepares long critical essays on 10 to 15 titles in each of its biweekly issues. These reviews are written by experts, including many well-known authors. The monthly *San Francisco Book Review*—which reviews, in about 10 extensive essays, a number of titles in particular subject fields—is less traditional than either the *Review* or the *Times*.

A similar British publication is *Books and Bookmen*, which reviews several dozen books in one or two essay-type articles in each issue. One reviewing source with more international appeal is *Books Abroad*, a monthly publication including reviews in English by experts on materials published in many foreign languages.

Examples of the descriptive blurb-type publications which are issued primarily to solicit subscriptions are the *Book News* and the *Book-of-the-Month Club News*.

Multimedia reviewing is covered in another article in this series, but one outstanding example of the type of reviewing source which is beginning to develop for "other-than-books" should be mentioned here as an example. The *Microform Review* is a quarterly publication of which about half is devoted to reviews. These reviews are written by authorities who consider not only the quality of content but also the technical aspects.

Finally, the major reviewing media are listed below. These publications extensively review current materials; are invaluable aids to libraries and media and information centers; and have, over the years, had a great influence on publishing policies. In 1975 alone almost 30,000 reviews appeared in six of these major sources (*Booklist*, *Choice*, *Kirkus*, *Library Journal*, *Publishers Weekly*, and *School Library Journal*) (*21*).

Choice and the *British Book News*, which are comparable in coverage, consist almost wholly of reviews written by authorities who are drawn from very large pools maintained by both journals. Neither of them, as a matter of policy, indicates reviewers' names because they feel that the reviews are collective efforts and that unsigned reviews can remain more objective. *Choice*, along with *Library Journal*,

is a major reviewing medium which includes 500 or so reviews of American-based books in each issue.

Library Journal, a semimonthly publication started in 1876, is probably the most extensive reviewing source in the world, covering about 200 titles in signed reviews in each issue. It also reviews phonorecordings. Its offspring, *School Library Journal*, also includes numerous reviews in each monthly issue.

Booklist, since 1905 a publication of the American Library Association, includes short descriptive/evaluative reviews of about 150 titles in each semimonthly issue. These reviews are of books and other media.

Publishers Weekly, started in 1872, features one section called "PW Forecasts," which reviews forthcoming books. Its British counterpart, *Bookseller*, quotes from reviews about new publications.

Kirkus Review, a semimonthly publication which is now owned by the *New York Review of Books*, has as its main thrust the reviewing of materials for public and school libraries, but also to an extent for academic libraries. Its rather lengthy reviews are written by staff members and are critical, unsigned essays.

Finally, a new reviewing source, *Bookreviews*, has just been announced by the Bowker Company as an offspring of *Publishers Weekly* and *Library Journal*. It will provide reviews of some 3,000 titles a year from the 10,000 or so reviewed.

These are but a few examples of the many general reviewing sources published in the United States and Britain, which are used worldwide in the selection process. General reviewing sources exist in almost every major language and are published in many countries of the world. Readers are referred to the book trade journals and library periodicals of the various countries for specific discussions. With the development of a book trade in the various countries comes the need to provide guidance for general lay readers and librarians to aid them in the selection process for their own individual interests and for libraries and media and information centers.

REFERENCES

1. Virginia S. Woolf, *Captains Death Bed and Other Essays*, Harcourt, Brace, New York, 1950, p. 130.
2. M. M. Kinney, M. Franck, and I. Bry, "The Book Review—a Hybrid in Literature and a Stepchild in Documentation," in *International Congress of Libraries and Documentation Centres, Brussels, Sept. 11–18, 1955*, Martinus Nijoff, The Hague, 1955, Vol. 2, Part A, p. 80.
3. Helen E. Haines, "Book Reviewing in Review," *Lib. J.*, **59**(17), 733 (October 1, 1934).
4. Arthur P. Young, "Scholarly Reviewing in America," *Libri*, **25**(3), 174 (September 1975).
5. Virginia Woolf, "Reviewing," in *Collected Essays*, Harcourt, Brace and World, New York, 1967, Vol. 2, p. 204.
6. Ref. 5, p. 206.
7. Wayne Gard, *Book Reviewing*, Knopf, New York, 1928, p. 14.
8. Richard L. Darling, *The Rise of Children's Book Reviewing in America 1865–1881*, Bowker, New York, 1968, p. 64.
9. Helen E. Haines, Ref. 3, p. 734.
10. John E. Drewry, *Writing Book Reviews*, The Writer, Inc., Boston, 1966, p. 7.

11. Rita James Simon and Linda Mahan, "A Note on the Role of Book Review Editors as Decision Makers," *Lib. Quart.*, **39**(4), 355 (October 1969).
12. Le Roy C. Merritt, "The Patterns of Modern Book Reviewing," in *Reviews in Library Book Selection*, Wayne State Univ. Press, Detroit, 1958, p. 4.
13. Ref. *12*, p. 4.
14. Dean J. Champion and Michael F. Morris, "A Content Analysis of Book Reviews in *AJS, ASR* and *Social Forces*," *Amer. J. Sociology*, **78**, 1258 (March 1973).
15. Lawrence E. Riley and Elmer A. Spreitzer, "Book Reviewing in the Social Sciences," *Amer. Sociologist*, **5**, 358 (November 1960).
16. Helen E. Haines, Ref. *3*, p. 734.
17. Henri Peyre, "What Is Wrong with American Book-Reviewing?" in *The Failure of Criticism*, 2nd ed., Cornell Univ. Press, Ithaca, N.Y., 1967, p. 323.
18. John Hollander, "Some Animadversions on Current Reviewing," in *The American Reading Public*, Bowker, New York, 1963, p. 228.
19. Rita James Simon and Linda Mahan, Ref. *11*, p. 354.
20. Helen E. Haines, *Living with Books*, 2nd ed., Columbia Univ. Press, New York, 1960, p. 101.
21. *Bowker Annual*, 21st ed., Bowker, New York, 1976, p. 191.

ROBERT D. STUEART

REVIEWS IN LIBRARY LITERATURE

Library literature in monograph form is a field unto itself, but it is not unlike the articles in library literature which Moon describes as spread so thin among so many sources that it becomes "possible for almost anything on the topic of librarianship, no matter how appalling, to find its way into print somewhere" (*1*).

Just as in other disciplines, monographic materials in library science and related fields have increased greatly in the last several years. This was preceded by an increase in the number of publishing firms devoted primarily to library science materials, vanity presses which publish an individual's work, and other publishers who have library science series. Even though the number of publications is most overwhelming, a very large percentage are eventually reviewed in at least one of the reviewing sources. According to Chen and Galvin, four-fifths of all the new library science titles are reviewed in at least one of the five major sources: *Library Journal, Canadian Library Journal, College and Research Libraries, Library Quarterly*, and *Wilson Library Bulletin* (*2*). To these must now be added the *Journal of Academic Librarianship*, which has made its debut since that study and which reviews more than any of the others listed except *Library Journal* and *Canadian Library Journal*. Not surprisingly, about 50% of all reviewed materials are reviewed in more than one source.

Some reviewing sources have a policy of publishing evaluative reviews, but others carry mainly descriptive reviews. This has caused some criticism such as that of Wasserman, who comments that:

> perhaps the limited standard of the intellectual discourse of the field is most dramatically reflected in the level of its book reviews. . . . For with only rare

> exception, there is virtually no serious review of the literature of librarianship. Reviews, like librarianship itself, tend to the descriptive and normative account of contents. The rigorous, analytic, scholarly assessment of ideas is most uncommon (*3*).

It is true that some reviewing sources lack quality, style, and reliability of reviews. Others have firm evaluative policies. There is enough variation so that generalizations cannot be made.

One point to be considered in reviewing library science materials is the purpose of the review. An additional role of the review media in library science, other than those already discussed under general reviewing, is:

> to provide a vehicle for peer appraisal in terms of new contributions to the literature. . . . Peer appraisal is, in some sense, an activity directed more to the professional reputation and stature of the author of a new work than to the intrinsic merits of the work itself. . . . Book reviews are a way of recognizing significant or meritorious contributions to the body of recorded information and knowledge. . . . Where peer appraisal is the dominant objective, the resulting review, of course, often tells the reader more about the author or compiler of the book than about the book itself (*4*).

This is different from the general reviewing media, except in literary criticism which also discusses authors and their qualifications.

Problems in Reviewing Library Literature

One can enumerate a number of other problems in regard to reviews and reviewing of library science and related materials:

FAVORABLE/UNFAVORABLE REVIEWS

The question of favorable/unfavorable reviews is one which is constantly present. Many feel that the unfavorable review is too often couched in descriptive terms, thus leading to a lesser time evaluation of the material in question. If one can generalize from the Chen–Galvin statistics, reviews of library science materials are a "chorus of praise." This time-limited study found that 70.9% of all reviews were favorable, 10.2% were noncommitted, and only 18.9% were unfavorable (*5*). These facts must be tempered with a statement that some journals, as a rule, will only publish favorable reviews, or will at least weed out unfavorable materials before they reach the reviewing stage. Very few journals have a rating system for the materials under review.

REVIEW LENGTH

The length of the review is considered by some to be an indication of its depth, since it might be assumed that a more thorough analysis will take more space. This

is not necessarily true, however, since many reviews hide the evaluative aspects in such verbosity that the review is almost useless. At the same time, a concise, analytical review might be very short.

The final decision as to length of the review, in most cases, seems to be left up to the discretion of the reviewer. Reviews do vary greatly, from a few descriptive statements such as in *Booklist* to the very extensive essays of several hundred words which appear in *Library Quarterly*.

TIME LAG

A considerable time lag occurs between publication of a monograph and the appearance of a review of that work. This is no doubt influenced by the fact that a large number of library science journals are quarterly or bimonthly rather than more frequent. The time lag is not unique to the literature of librarianship and is, in fact, greater in some other professional reviewing areas. However, there is not as great a lag in the current general literature reviewing sources.

SIGNED/UNSIGNED REVIEWS

Most reviewing journals provide signed reviews. Only in a very few cases is it the policy of the journal not to indicate who has reviewed the material in question—a good example of this, although basically a general reviewing source, is *Choice*, which does not indicate the reviewer. Contrary to what happens in general reviewing sources, where reviews are arranged by "best to worst" or some other criteria, library science reviews in most journals are listed alphabetically by author. Some journals—such as *Journal of Academic Librarianship* in its "Guide to New Books and Book Reviews"—group summaries of reviews, which have appeared in other journals, under 20 or so subject categories within library and information science.

THE REVIEWER

The reviewer for professional journals is selected on the basis of his/her "ability, experience and training. . . . He (she) is expected to present his interpretation and criticism in carefully chosen statements" (*6*). The majority of reviewers for library science journals are educators and, unlike reviewers of general literature, are almost all doing this work as a sideline and are not paid for it. Just as with general literature journals, most library science publishers have a cadre of reviewers, with defined profiles, who review for them.

Unique Sources for Reviews

A word must be added about some unique publications which review library science and related materials, but which fall outside the scope of regular review journals. First, the *American Reference Book Annual* includes a section on "Librarianship and Library Resources" that reviews around 150 monographs per

year. Second, *CALL* (Current Awareness/Library Literature), a quarterly publication concerned with the literature of librarianship, publishes reviews of monographs in the area of literature of librarianship. Also, a special issue of a journal or a separate publication may be issued to review some aspect of librarianship or one publication in particular. Examples are the whole issue of *RQ* devoted to reviewing an encyclopedia and the *Journal of Academic Librarianship*'s special issue devoted to a major review-essay offering detailed, critical comments on the second edition of *Books for College Libraries*. Finally, two journals which are of great importance to librarians are the *Book Collector's Market* and its older British cousin, the *Book Collector*; both review books about books, books about book collecting, and works on bibliography, publishing history, the book arts, and other related topics.

Sources of Library Science Reviews

Many reviews of library and information science materials appear in general reviewing sources which have already been discussed. Those include *Choice*, *Library Journal*, *School Library Journal*, and *Kirkus Review*. Others appear, somewhat sporadically, in specialized subject journals which include reviews. Among those are the *American Archivist*, a quarterly publication containing several extensive signed reviews in each issue; *Learning Today*, which carries two or so signed reviews in each issue; *Audiovisual Instruction*, which, in addition to reviews, includes an index to audiovisual reviews in other publications; and *Media and Methods*, which includes about half a dozen very extensive signed reviews for films, tapes, books, and other media. A listing of the primary English-language reviewing sources which cover the whole scope of librarianship would include the British *Library Association Record*, containing several signed reviews in each issue; *Canadian Library Journal*, which (like *Library Journal*) is a bimonthly publication including several short, but good, signed reviews; the *Australian Library Journal*, a monthly which also includes several short, signed reviews; *New Zealand Libraries*, which occasionally publishes reviews; *Library Quarterly*, which in each issue publishes 10–15 very extensive (and perhaps the most critical) reviews of professional literature; *Wilson Library Bulletin*, which contains several short reviews in each monthly issue; *New Library World* (a British publication similar in scope to *Wilson Library Bulletin*), which includes a few reviews in each issue; and *Drexel Library Quarterly*, which includes a few reviews in each issue.

Several divisions of the American Library Association issue quarterly journals, most of which include reviews. Some are brief, as in the case of *RQ* and *Top-of-the-News*, and others such as *School Media Quarterly* and *Library Resources and Technical Services* are more extensive. One division journal, *College and Research Libraries*, appears bimonthly and includes from five to ten reviews in each issue on topics which are of major interest to academic and research libraries. Another journal which has a similar audience but which extensively reviews professional literature is the *Journal of Academic Librarianship*. Its "Guide" section excerpts comments on about 160 items from reviews which appeared in other

sources and arranges these under 18–20 general "libraries" topic areas. An Australian journal, *Australian Academic and Research Libraries*, publishes two or three lengthy reviews in each issue.

Some regional publications, such as *PNLA Quarterly* and the *Southeastern Librarian*, publish a limited number of lengthy reviews, and some publications of state associations occasionally carry reviews of interest to their membership. Other reviewing sources of interest to special groups of librarians are those published by special library associations, such as *Special Libraries* (in the United States), which publishes 20–30 very brief reviews in each monthly issue; and *Aslib Proceedings* (in Great Britain), which includes a few select extensive reviews. Special interest journals such as the *Journal of Library History* in the United States and its British counterpart, *Library History*, publish a few long critical reviews in each issue. The Bibliographical Society (Oxford) publishes several extensive critical reviews on a certain theme in each issue of *The Library*. Likewise in the area of documentation, an ALA publication, *Journal of Library Automation*, publishes 5–10

TABLE 1

Library and Information Science Journals That Publish Reviews in English

Title	Average number of reviews per issue	Frequency	Average length of reviews; signed/unsigned
Annals of Library Science and Documentation (India)	5–10	4/year	Brief, unsigned
Eastern Librarian (Bangladesh) (English and Bengali)	1 (occasional)	3/year	Lengthy, signed
Ghana Library Journal	1–3	2/year	Brief, signed
Herald of Library Science (India)	18–20	4/year	Brief, signed
Iaslic Bulletin (India)	2–3	4/year	Brief, signed
Indian Librarian	15	4/year	Brief, unsigned
International Forum on Information and Documentation (FID)	1–2 (occasional)	4/year	Varies, signed
International Journal of Law Libraries (English and French)	5	3/year	Brief, signed
ISLIC Bulletin (Israel)	3–5	3/year	Brief, signed
Library Herald (India)	1–2	4/year	Lengthy, signed
Majalah perpustakaan (Maylasia)	5–10	2/year	Brief notices, signed
Maktaba (Kenya)	5–10	4/year	Lengthy, signed
Nigerian Libraries	1–5	3/year	Brief, signed
Pakistan Library Bulletin (English and Urdu)	1–3	4/year	Brief, signed
Rhodesian Librarian	1–5	4/year	Brief, signed
South African Libraries (English and Afrikaans)	5	4/year	Brief, signed

TABLE 2

Major Journals That Publish Reviews in Languages Other Than English

Title	Average number of reviews per issue	Frequency	Average length of reviews; signed/unsigned
Accademic e biblioteche d' Italia	5	6/year	Varies, signed
Archives et biblioteques de Belgique	5–10	2/year	Brief, signed
Association des bibliothecaires français	8–10	4/year	Brief, signed
Bibliotekar (Soviet Union)	5–10	12/year	Lengthy, signed
Bibliotekar (Yugoslavia)	6–8	6/year	Lengthy, signed
Bibliothekar (German Democratic Republic)	1–3	12/year	Brief, signed
Bibliotekarz (Poland)	2	12/year	Lengthy, signed
Bibliotheekgids (Belgium)	10–20	2/month	Brief, signed
Biblios (Austria)	20–30	4/year	Brief, signed
Bogens verden (Denmark)	15	10–12/year	Brief, signed
Bok og bibliotek (Norway)	5–10	6/year	Brief, signed
Boletin de la Direccion de Archivos y Bibliotecas (Spain)	10	6/year	Brief, signed
Buch und Bibliothek (Federal Republic of Germany)	2–10	11/year	Brief, signed
Nordisk tidskrift för bok- och biblioteks-vasen (Norway)	1–3	4/year	Brief, signed
OPEN—Vaktijdschrift voor bibliothecarissen literatiur derzoekers bedujfsarchi-varissen en documentalista (Netherlands)	1–2	11/year	Lengthy, signed
Przeglad biblioteczny (Poland)	3–5	4/year	Lengthy, signed
Sovieskia bibliografica (Soviet Union)	5	6/year	Lengthy, signed
Verband der Biblioteken des Landes Nordrhein (Federal Republic of Germany)	10	4/year	Brief, signed
Zeitschrift für Biblioteks-wesen und Bibliographie (Federal Republic of Germany)	6–10	6/year	Brief, signed
Zentralblatt für Bibliotheks-wesen (Federal Republic of Germany)	5	12/year	Lengthy, signed

signed reviews in each issue; each issue of the *American Society for Information Science, Journal* contains about five signed reviews on documentation; and the British equivalent, *Journal of Documentation*, also includes reviews in the general area. Special library associations such as the Catholic Library Association (*Catholic Library World*), American Association of Law Libraries (*Law Library Journal*), Music Library Association (Music Library Association *Notes*), and Medical Library Association (*MLA Bulletin*) all publish short reviews of professional literature of interest to their readerships.

At the international level, perhaps the best known English-language publications which include reviews are *Libri*, a quarterly official publication in four languages (International Federation of Library Associations); and the *UNESCO Bulletin for Libraries*, a bimonthly publication.

Many national and international library and information science organizations publish English reviews in their journals. The listing in Table 1, although not exhaustive, includes some major journals in this category. Some of the major, non-English, reviewing journals in library science and related areas are listed in Table 2.

Official journals of other national and international library associations are listed in the *International Guide to Library, Archival, and Information Science Associations* (*7*), and many of these include reviews of particular interest to their audiences.

REFERENCES

1. Eric Moon, "The Library Press," *Lib. J.*, 94, 4105 (November 15, 1969).
2. Ching-chih Chen and Thomas J. Galvin, "Reviewing the Literature of Librarianship: A State of the Art Report," in *American Reference Book Annual, 1975*, Vol. 6, p. xxxvi.
3. Paul Wasserman, *The New Librarianship: A Challenge for Change*, Bowker, New York, 1972, p. 156.
4. Ref. 2, p. xxxii.
5. Ref. 2, p. xxxviii.
6. Maurice F. Tauber, in "Foreword" to *Reviews in Library Book Selection*, by LeRoy C. Merritt, Martha Boaz, and Kenneth S. Tisdel, Wayne State Univ. Press, Detroit, 1957, p. v.
7. Josephine Riss Fang and Alice H. Songe, *International Guide to Library, Archival, and Information Science Associations*, Bowker, New York, 1976.

ROBERT D. STUEART

REVIEWS AND REVIEWING OF MULTIMEDIA MATERIALS

The organization of this discussion concerning "nonprint" (*1*) or "multimedia" materials is as follows:

Introduction and general considerations; comparison between book and nonbook reviews
Access to reviews
Types of review journals

Guidelines for reviewers and their implications
Recommendations by producers and consumers
Summary and conclusions
References and notes

The discussion is centered on film as the single most important media form in the nonprint area.

Introduction and General Considerations

To survey the reviews and reviewing of audiovisual materials—films, videotapes, audiocassettes, filmstrips, film loops, slide sets, multimedia sets—it is necessary to recognize that there is a hierarchy of materials formats, a hierarchy of categories within each format, and a hierarchy of uses. Each hierarchy and its subdivisions influence the characteristics of reviews and reviewing, and the hierarchies may be inextricably interconnected.

At the top is the "theatrical film," often called a "feature film." Offering famous directors and stars, often with musical scores which reach popularity on their own, these are seen by the general public in paid attendance in theaters. Hence the name theatrical film. Reviews of such films—which range from epics like *Lawrence of Arabia* to the modest realism of *Nothing but a Man*—vary in length and quality, all the way from the superb essays of Pauline Kael in the *New Yorker* and other literary magazines, to the brief comment in a local newspaper. The former resemble critical literary essays, and may be pages long; the latter, the buyers' guide or promotional squib, often does not even merit the term review.

The theatrical film is considered to be one of the major art forms of the 20th century, demanding and deserving close attention and detailed criticism. The rest of the panoply of multimedia materials are considered "educational resources" and beneath serious criticism and discussion. The single exception which bridges this gap is the "nonfiction feature film," which may be on the highest level of achievement: for example, the Maysles film *Grey Gardens* or Barbara Kopple's *Harlan County*. Once subsumed under the rubric of "documentary," these nonfiction feature films are seen to have both theatrical and entertainment values as well as "instructional" value. Since the distribution of both nonfiction and fictional (theatrical) feature films is through paid attendance at theaters, the reviews of these films appear in journals and newspapers very close to the date of their opening at major outlets in various cities. The quality of these reviews is judged on the same basis as one might apply to the front-page reviews in the Sunday *New York Times Book Review* section.

There is a difference between the reviewing of books in literary supplements and the reviewing of films in journals. Important *book* fiction may be assigned to a novelist, for example, for review, while the editors may seek a subject specialist for *nonfiction*. This does not ordinarily occur with feature films. The same film reviewer will tackle both Fellini's *Amarcord* and *Harlan County*. Only the daily book

reviewers in newspapers tend to take on all subjects, while the longer critical essays in the Sunday supplements tend to be distributed according to subject category or type.

Obviously, not all films are reviewed, even when they are outstanding. Sometimes the choice by a particular journal is made on the basis of which films are construed as being of possible interest to readers. Sometimes films are deliberately avoided. One such case is cited by Albert Maysles, coproducer of *Grey Gardens*, a controversial psychodrama in the category of nonfiction feature film. According to Maysles, the *New Yorker* has yet to review this film, although it was extensively reviewed by the *New York Times* and other major review periodicals (*2*). Various hypothetical conjectures could be made: that the film was accused of exploiting the connection of its subjects with their relative, Jacqueline Onassis, and that since she is an editorial contributor to the *New Yorker*, it was not considered desirable to review the film (*3*). There had been a near legal battle between the *New Yorker* reviewer, Pauline Kael, and the Maysles brothers about her review of a previous film, *Salesman*, when they warned her that her comments could be considered libelous (*4*). All such complexities are possible, of course, on the high artistic and social level of the major feature film, where politics or personality may enter into the reviewing stance of a journal or newspaper, and where public attention equals that of attention to the demigods of the celebrity world.

The hierarchy of categories within formats must also be taken into consideration. A long film will ordinarily, but not necessarily, command a long review in a literary journal. A short film may be ignored entirely. Programs of short films may be reviewed when a single film will be overlooked, and this fact clearly relates to the function of reviews of feature films: to provide guidance to single individual readers, the purchasers of the journal or newspaper, who are expected to pay to view the film. This function is quite different from that of reviews in journals which serve as guides to purchase or rental by libraries, where the ultimate audience may never see a review before they see the film itself. The disparity in dates of reviewing can be exceptional. While the *New York Times* will review films usually within the week of their opening in New York City, because it will be crucial to the theater life of any given film, library journals may not review films for more than a year. An outstanding exception is *Booklist*, which will not accept a film for review more than 3 months after its release to the public.

The hierarchy of categories which relegates all "instructional" materials to the library or educational journals for review is, of course, linked directly to the conception of "use." Although many nonfiction feature films may be reviewed in these journals, their reviews tend to concern themselves almost entirely with content and educational utilization, not with filmic qualities.

It should be self-evident that no slide sets, film cartridges, or other similar instructional materials will receive anything like the critical attention that the feature film receives. Their use implies or involves purchase, and no literary journal is concerned with this type of educational material.

There are other crucial similarities and dissimilarities between the reviewing of

book and nonprint materials. Of the similarities, it can be readily observed that materials in all forms are produced on a continuum of complexity which ranges from the simple curriculum-related item, like a textbook, all the way to the independent creative act of the underground film maker, who resembles the poet and the novelist.

Reviews and reviewing, therefore, will be assessed by a reviewing medium according to audience (often by age or grade) for both print and nonprint, or by institutional focus, or by format and specific medium.

Of the dissimilarities, it must be recognized that nonprint or multimedia materials require a technical and aesthetic expertise, a knowledge of the peculiar syntax of each medium, an acquaintance with the individual or group potential of each format, and other aspects of a time/space experience outside the realm of print. Moreover, in a very practical context, users of nonprint materials are far more dependent on reviewers than are book librarians, as the price of multimedia materials *per unit* tends to far exceed comparable units in print. While this does not mean that the *per person* cost of a group showing of a film is actually more than the per person cost of a number of individuals using a moderately expensive book, the initial outlay for films and multimedia materials seems so formidable that many school systems, for example, forbid the purchase of nonprint materials in the absence of a favorable review in an accepted review journal.

Since school systems may often actively discourage the previewing of films and other materials on the basis that this necessary activity consumes too much professional time, the reliance on reviews becomes an ethical as well as a financial issue. According to one source (*5*), the most recent breakdown of annual expenditures for films alone went something like this: $57 million for elementary grade films, $10–15 million for post-8th grade films, and $3 million for public library films. The stupefying difference between what is spent on films for the elementary grades and what is spent for public library film collections possibly reflects: (*a*) the stature of each institution in the larger social context; (*b*) the lack of readiness on the part of public libraries to participate in the so-called media revolution; (*c*) the types of films which are produced; (*d*) the emphasis on certain types of teaching in the elementary grades; and (*e*) the great cost of feature films most suitable for the general audiences which are the clients of public libraries, if and when these films are available for purchase rather than the customary short-term 5-year lease or rental.

The most conspicuous difference between books and films, for example, in terms of purchase and reviewing, occurs at the college and university levels, where many variables are operating. A college will purchase all the books of certain publishers; it will purchase few films, relying on rentals to fulfill professors' needs. A university may build up a research collection of manuscripts and rare archival materials, but it is only in special disciplines that departments may be developing film collections of any research depth (*6*). Isolated museums and special institutions have extensive collections of film, and these will look to reviews of a critical kind rather than to the "what to buy" variety endemic in library literature.

A major dissimilarity in reviews and reviewing between print and nonprint is

precisely that all books which are reviewed in library literature are for sale. Not all films are. The problems of leasing, the "life-of-the-print" lease, and other restrictions do not show up as part of the reviewing criteria. Most of the films which are reviewed in library literature tend to be short films, usually for school, college, or public library rental or purchase. The longer films—the great works of art—are not available ordinarily except on extremely limited arrangement. This is like saying that one could have a copy of Tolstoi's novel *War and Peace* in one's library for 5 years; then it must be returned to the publisher or payment made for its use for another 5 years. Clearly, the greatest profit for the film distributor lies in rental, not in sales; and reviews, therefore, are used more often as guides to rental than to purchase. Whether this makes any significant difference in the emphasis of a review is a topic which hopefully will engage the attention of some researcher's inquiry. It is an important difference, just as is the fact that public libraries tend to use film reviews primarily as selection guides for *preview* only. Comparatively little print material is sold on this preview basis, whereas it is the core of the film purchase/rental experience.

Filmstrip sets (multimedia sets containing slides) and picture sets are also available for preview, and reviews are used to establish priorities for purchasing these. The cost for these units is not comparable to the greater cost for films, so the temptation is to purchase without preview, simply on the recommendation of the reviewer. Videotapes and audiocassettes, on the other hand, are so readily copied that they are almost never offered for preview. The review of a videotape then becomes crucial indeed.

Access to Reviews

Any consideration of the journals which publish reviews of any length requires a preliminary survey of the bibliographic access to those sources. The following is a brief list which accepts the fact that not only do journals come and go, but indexes to them are capricious and change formats with often bewildering frequency.

According to *Choice* (7), there is much duplicate information provided by two major index-digests: *International Index to Multi-Media Information* (1973–, quarterly; formerly *Film Review Digest*; published by Audiovisual Associates) and *Media Review Digest* (1973–, annual, with quarterly supplements and 10 regular installments for educational material appearing in *Audiovisual Instruction*; published by Pierian Press). Both of these provide digests or excerpts from reviews, physical description of medium, several formats of nonprint materials, feature film and popular recordings coverage, source of review, and alphabetical and subject listing. *Media Review Digest* generally provides additional information: an annual index, evaluations, cumulations of feature film ratings (beginning in 1974), annotations of periodical review sources, listing by type of medium, and indications of awards and prizes. *Media Review Digest* generally digests considerably more reviews than does *International Index*, and its annual volumes contain about 40,000

citations to reviews from over 200 periodicals, including a few which review feature films. *Choice* recommends, in the strongest terms, that these publications be combined to create a single comprehensive index-digest to reviews.

In comparison with these two major indexing and digesting sources, only the briefest of summaries is offered by *Educational Media Index*; and the NICEM (National Information Center for Educational Media) catalogs—which are extensive and organized according to format of medium; for example, 16-mm films, 8-mm films, overhead projectuals, etc.—cannot be considered review indexes even though they offer brief summaries of content.

Access to feature and other film reviews is now provided by the current monthly *Film Literature Index* and the *New York Times Reviews*, a retrospective list. *Film Review Index*, which began in 1970, needs to expand its coverage to include independent, experimental, and avant-garde films, which are increasingly used by schools as adjuncts to curricular interests, and by public libraries as program units. So-called underground films are regarded by colleges and universities as artifacts in their own right, and frequently programs of these films appear in theatrical distribution for paid audiences.

The Review Journals

Because many journals publish reviews of one kind or another, it may be useful to discuss those most frequently mentioned by a randomly selected sample of interviewees at the 1977 EFLA (Educational Film Library Association) American Film Festival, which was attended by media specialists in all subject areas and from every part of the country (*8*).

Public librarians tended to rely upon *Booklist*, *Previews*, *Landers*, *Film News*, and *Film Library Quarterly*. *EFLA Evaluations* (formerly a card service, now in sheets) was mentioned as a good source, with *Sightlines*, the EFLA publication, as a checklist for further investigation. While they seemed to use *Previews*, the public librarians interviewed cited it as "too school-oriented" for most public library uses.

School media specialists relied heavily on *Previews*, *Film News*, *Booklist*, *Media & Methods*, and comments in *School Library Journal*. Reviews from *Previews* or *Booklist* were routinely used as documentation for purchase, even without preview, as were reviews from the language-arts-oriented *English Journal* and from *Science Teacher*.

For academic institutions—from community college to university—there is a relationship between the use of complete feature films (in 16-mm format) for instruction, and the review journals required and used. Subject journals, therefore, are heavily consulted in addition to the review journals listed above. One science film specialist, now working in a major government-related agency, has suggested that *Landers* and *Booklist* are basics, with special journals like the *American Anthropologist* highly rated for reviews. The *Science Teacher* apparently provides full media coverage. *Saturday Review* is still a major source of lengthy reviews for

recorded musical performances, with *Library Journal* providing shorter but more numerous reviews on recorded materials. For filmstrips and multimedia packages, *Previews* and *Media & Methods* offer both quantity and quality in reviewing.

In surveying these journals, the following questions need to be asked even if, as yet, there are no definitive answers available.

1. How much coverage is provided; that is, out of the entire universe of produced materials, how many items are reviewed annually in any specific journal? How many are reviewed by all journals together? What duplication, if any, occurs, and is this duplication useful or nonproductive?
2. What is left out of multimedia review journals? Is there a preliminary judgment by editors who decide what shall or shall not be reviewed? And, if so, on what basis is the selection of items made? On what basis are items rejected for the purposes of review?
3. Are only favorable reviews published? If so, can it be demonstrated that there is a direct relationship between the amount of advertising accepted by specific audiovisual producers and the types of reviews which are published about their wares?
4. For which type of institution are the review items selected? Is there a complete or partial bias toward certain types of institutional use?
5. Who are the reviewers for each journal, and what are their qualifications? Are they subject specialists, general media users, librarians, consultants, producers, free-lance artists? How are they selected, and how is material assigned to them? Are the reviewers paid for their labors? Do they keep the materials they review? (Note: films are never kept by reviewers; they are too expensive—but most other items are retained by the reviewer.)
6. In journals which we presume to be broad-based, is there, in fact, an unconscious or inadvertant emphasis on a certain type of *content?* Might this emphasis be related to (*a*) the competence of the reviewers for that journal, or, (*b*) the number of items produced in, for example, humanities categories?
7. Are the reviews evaluative, or merely descriptive annotations? As previously indicated, the reviewing of films and other multimedia forms requires complex skills for evaluation. Are these skills in evidence, or do the reviewers simply report on "content"?
8. How long are the reviews? Is sufficient length provided for an in-depth appraisal?
9. Is material in many formats reviewed, or does the journal specialize or concentrate on only one format? How do the types of formats included relate to the production of that format by volume?
10. Are the reviews signed, and is the institutional connection of the reviewer stated plainly?

These questions can be answered, partially at least, with observations about how the situation can be improved.

Previews, published by R. R. Bowker Company, has had a phenomenal success since its inception in 1974. At present it has a circulation of about 19,000, with primarily an audience of school systems and school librarians and media specialists. It is devoted entirely to nonprint reviews, having abandoned the inclusion of articles. According to its editor, Phyllis Levy Mandell, *Previews* includes both favorable and unfavorable reviews.

The reviewers, presently 400 in number, have a trial run before they are given regular assignments. Potential reviewers indicate the areas of their own special interests or expertise. For curriculum materials, school media specialists—who constitute the single largest review group as well as the single largest audience for *Previews*—are asked to review items with the help of subject specialists and students of the age group for which the item is intended. Increasing numbers of public librarians, according to the editor, are both subscribing and acting as reviewers, as are media instructors in both graduate and undergraduate library schools. It is the editor's hope that *Previews* will eventually reach the stature of *Library Journal* as a buyer's guide, although she concedes that the level of competence on the part of public librarians will have to be raised before they can participate in the review process of multimedia materials. What that level of competence might be is discussed in the section on "Guidelines for Reviewers."

Previews considers *Booklist* to be its closest competitor in terms of numbers of reviews published and audience reached. Ms. Mandell observes, however, that *Booklist* will not publish unfavorable reviews, as it apparently views its function as offering purchase suggestions. Restricting items for review to those released to the public within 1½ years of the date of review, *Previews* publishes between 1,500 and 1,800 reviews per year.

A well-known public library film director categorized *Previews* as having few reviewers qualified to discuss serious subjects like rape, drugs, medicine, and made the suggestion that *Previews* should consider "double reviewing" by recognized subject specialists. The editor acknowledged that *Previews* cannot cover subjects as specialized as medicine, but noted that hospitals and medical schools are themselves producing multimedia materials for their own audiences.

That *Previews* has a large circulation is mentioned here only to stress the possibility of the interrelationships among the types of materials which are produced, the emphasis on reviewing curriculum materials, and the audience for multimedia productions. These relationships may have an unfortunate impact on the small independent producers, as what is considered "curricular" is often interpreted quite narrowly as essentially didactic in nature, while the experiential film or slide set is ignored by the schools simply because teachers do not know how to teach with such materials.

Reviews in *Previews* are approximately 150 words long, with more room given to feature-length films; and all reviews are signed, with institutional connections noted.

Booklist, published biweekly by the American Library Association, has a circulation double that of *Previews* (a monthly). Booklist has a stated policy, that its purpose is "to provide a current guide to materials worthy of consideration for purchase by small and medium-sized public libraries, school media centers, and community college libraries" (*9*). Its 38,983 readers are largely public and school librarians.

Booklist's limit for the date of reviewing is 3 months following release date to the public, and this policy, of course, tends to maintain *Booklist*'s position as one

of the most current and important of all review journals. This fact must be weighed against the comparative paucity of the number of reviews of multimedia materials. Reviews for films are considerably more extensive than those in *Previews*; these are initialed. *Booklist* also provides reviews of videotapes and other instructional formats. Reviews of major formats tend to run about 300 words and more, depending on the importance of the item.

Film News receives a generally high rating from both public and school librarians. Published by Rohama Lee, this journal is widely regarded as reliable and interesting, with extensive reviews. Reviewers are identified through a "contributors" list. The journal will accept reviews of materials 2 years old, as it attempts to provide wide coverage of award winners and other notable materials.

A unanimous comment from those interviewed, however, was that reviews tend to be rewritten by the editor of *Film News* (*10*). While this complaint was registered about other journals as well, and rewriting was accepted as a sometimes necessary expedient for smoothing or shortening prolix prose, the complaints about *Film News* were more specifically against the frequency of revision for the sake of making a review less unfavorable. Such complaints would have to be scrupulously checked against the realities, of course.

As film remains the most important category of multimedia purchases for colleges, universities, and large public libraries, the Educational Film Library Association (EFLA) has for years served not only as the host for the American Film Festival (AFF) and the giver of its prestigious awards, but also as a focus for the reviewing of films in all categories. EFLA, which now plays down its origins in "educational" film since its concerns are far-reaching, covers major documentary films as well as "film as art" shorts. The association's annual festival, started in 1958, is a prime showcase for "outstanding 16mm releases" (*11*). Awards by jurors at the AFF are highly respected, as each festival jury includes two film specialists, two subject specialists, and two utilization specialists. The finalists considered by the juries are selected from the annual review entries of 40 EFLA committees situated around the country.

In its journal *Sightlines*, sent to its membership, EFLA publishes brief annotations on film finalists, and these function as substitute "reviews." In its *EFLA Evaluations*, originally on cards and now on sheets, the organization publishes about 400 reviews annually. These are selected on the basis of the editors' judgment about which films will tend to be most in demand. This figure is roughly one-tenth of the total production of films annually.

The conspicuous difference between EFLA reviews and those in other journals is that the former are the products of committees rather than individuals, and the work of the committees is rewritten into appropriate length by an editor. The committees are composed of EFLA members, primarily public and school librarians, with a few museums and colleges participating. Nadine Covert, executive director of EFLA, observes that these committees tend to be humanities oriented, with little experience in the sciences (*12*). No evaluation is made for business- or industry-sponsored films, and no theatrical films are reviewed except those which have been made available in 16-mm form and which have academic and public use (*13*).

Sightlines goes to 1,800 members of EFLA at present, but plans are being made to actively expand membership by school systems.

Landers Film Reviews, with a circulation of about 3,500, is now in journal form after many years as a loose-leaf service. Appearing bimonthly, it is arranged alphabetically by title, with a subject and title index. A typical issue contains about 125 reviews of approximately 150 words each. Reviews consist of a statement of purpose of the film, with very short critical comments; basically, the reviews are content summaries, and they are not signed. They are aimed at schools, providing grade level and curriculum use assessments. Generally, it is not considered to be as strong as *Previews*, since it omits critical judgment. It is, however, a journal completely devoted to reviews, with no advertising.

There are other specialized review journals, for example, *Film and Broadcasting Review*, a biweekly publication of the U.S. Catholic Conference. This offers brief reviews with specific ratings for "moral acceptability."

Of the film journals which review theatrical films, *Sight and Sound* (a British publication) offers lengthy reviews on a high intellectual level. In *Film Comment*, Amos Vogel (one of the founders of the 16-mm movement) writes a column called "Independents," which is one of the few sources regularly covering the avant-garde and so-called personal films. *Take One*, a monthly, also provides extensive reviews and covers both fiction and nonfiction features. But the major academic journals, like *Quarterly Review of Film Studies* and *Cinema Journal*, ordinarily publish reviews only of books about films, rather than of films themselves. That is not surprising, of course, as their substance is precisely the critical analysis of films, directors, actors, and new theories in semiotics.

In the United States, the most sophisticated film criticism is most evident in the reviews of newspapers like the *New York Times*, the *Village Voice*, and the *Boston Phoenix*; and in general magazines, which include *Saturday Review, Time, Newsweek, Esquire, Penthouse, New Republic*. Of these, the *New Yorker*—with critics Pauline Kael and Penelope Gilliatt, alternating in 6-month stints—is generally considered outstanding. It is not seldom that Kael, Gilliatt, Andrew Sarris, Susan Sontag, and other critics will produce reviews which equal in length and literary value many extensive essays. What begins as a "review" of a film playing at a local theater will end, quite often, in permanent anthologies of "film criticism"—and this connection is worth noting, as it distinguishes absolutely between a critical review and the review which is part of a "buyers' list." The fact that no library journal or educational media publication regularly carries lengthy reviews of this critical caliber should be acknowledged. That fact need not be deplored, as the functions of general magazine reviews and those in professional journals are dissimilar. What can be lamented, perhaps, is that if librarians and media specialists do not keep up with the major reviews of theatrical and nonfiction feature films, they may miss the opportunity of sharpening their own critical faculties and of increasing their facility with the grammar of film. This is not intended to mean that there are not many excellent and sophisticated reviewers who generously produce reviews for library literature; it simply means that the "buyers' list" function of that literature tends to preempt many critical considerations.

Guidelines for Reviewers and Their Implications

Since the range of reviews moves from pseudo-reviews of two or three sentences, through compressed but evaluative statements, to longer and more detailed analyses of content and technique, it is perhaps difficult to establish some generally applicable criteria which can be or are employed. Thanks to the generosity of the editors of *Previews*, the executive director of EFLA, and James Limbacher, we can examine some typical guidelines and explore the implications of these criteria questions.

Previews sends a guidelines brochure to each reviewer along with the item intended for review. The guidelines are essentially divided into two parts: Critical Evaluation and Bibliographical Information. While the latter cannot be discussed here, as such a discussion is outside our general purpose, it is important to recognize that bibliographic information for multimedia materials can be complex. It is therefore not surprising that the guidelines for bibliographic information are three times longer than the guidelines for critical evaluation.

Since the average length of the *Previews* review is 125–150 words—with occasional greater length for feature films—the reviewer is under considerable pressure to exercise an unusual ingenuity of shorthand cues to readers, or is forced to ignore many of the suggested guidelines. The editor of the journal asks that "points mentioned below" should be included in each review. These points include:

I. Critical evaluation:

Evaluate the strengths and/or weaknesses of the content, presentation, and medium. Be critical and evaluate the item in respect to authenticity, and accuracy, appropriateness, scope and content, interest, organization, technical aspects, special features, and potential uses.

Content

Include a very brief factual description presenting a statement of subject.
Is it interesting? Is it dully factual or does it appeal to the imagination?
What are the subject area and scope—are they too broad, too narrow?
What is the intended purpose of the presentation and is it fulfilled?
Is authentic documentation used? (photos vs. illustrations, actual voice of public figures)
Are facts presented impartially or are they biased?
If biased, have facts been distorted?
Is the information correct?
Is this a reissue of a previously released item—and, if so, has the information been updated for this presentation?
Is the content accurate?
Is the organization clear and the presentation logical and coherent?
Are the important points emphasized? Does the item present full coverage of the subject or are there any gaps in the presentation?
Is the presentation credible to the viewer?
Can the item be related to the users' own experiences or cultural environments?
What type of illustrations are used—photographs, drawings, etc.
If a film, is it animated? Is it a dramatization? Is there narration?

It should be obvious to the present reader that this set of guidelines presents a series of formidable tasks to an uninitiated reviewer, and certainly a series of difficulties to the initiated. Moreover, some questions—for example, "What types of illustrations are used"—seem more related to technical qualities, the next section of the guidelines, than to a discussion of "content" or "subject." Questions relating to "reissues" seem to be more related to bibliographic information than to a consideration of how well the film does what it attempts.

Most conspicuous is the curricular emphasis on "accuracy." It would require extensive research, not simply checking on a few facts, to demonstrate that the "content" of a film like *Corrida Interdite*, which uses a bullfight as a springboard into a poem of ritual and death, is "accurate." The *Previews* guidelines would almost seem to have been written for teachers of grade and high schools, rather than for "film critics," since the emphasis is almost entirely on the didactic aspects of information transfer. *Seeing with Feeling*, by Richard Lacey, or *Films Deliver*, by Schillaci, perhaps should be sent to each reviewer, as these books would quickly dissuade a potential reviewer from believing that the *function* of a film is to convey didactic information. Since films can not only deliver didactic information, but excel at providing the motivational stimulus for group discussion and direct response to an experience, the guidelines provided by *Previews* are not useful for experiential films, but only for didactic ones.

In judging the content guidelines from *Previews*, one should recognize that the school orientation of the journal promotes a concept of reviewing which is considered by film and communications specialists to be essentially noncinematic, and by modern educators to be essentially as outdated as the old "teacher-is-the-fountain; student-is-the-empty-pitcher" paradigm of education.

Not having the space here to enter into an extensive examination of theories of knowledge, or the sociology of education, the present writer would indicate briefly that at the date of this writing, the *Previews* content guidelines remain in a stiffly cognitive realm which pretends that today's facts are not tomorrow's fallacies. When film has such power to promote affective learning, it seems little short of amazing that *Previews* should ignore judgments about the emotional and behavioral effects of a film being reviewed. Fortunately, while the guidelines may be remiss, many *Previews* reviewers have the good sense to discuss the emotional stimulation which a film may provide.

Questions like "Is the content accurate?" have surprisingly little relevance to many useful and important films, all the way from the hilarious *Pow-Wow*—a short, nonverbal scanning of the activities of a band practice session in the rain—to the recent *The Flashettes*, which is, in the word of a review in *Film News*: "a beautiful film experience about a track team of young black girls. It's a sports film, but the relationships among the girls, their families and their coach is what *The Flashettes* is all about" (*14*). Note the use of the phrase "film experience," and note also that in a very short review, what *Previews* calls "a very brief factual description presenting a statement of subject" may come to constitute the entire review. To use Tolstoi again: you could no more say that *War and Peace* is a novel "about"

Napoleon's defeat in Russia than you could say that Jean Cocteau's film *Beauty and the Beast* is "about" a lion-maned monster who captures a maiden. "Content" is so intricately connected and interwoven with the medium which transmits it that it is almost impossible to describe the texture and meaning of a subject in a brief review.

Again: a question like "Is authentic documentation used? (photos vs. illustrations, actual voice of public figures)" displays a certain optimism about the nature of "authenticity." For certain purposes, usually in the presentation of abstractions and generalities, illustrations in a graphic medium other than photography may be perfectly acceptable. For other purposes, usually concrete and specific, photographs may be required. However, photographs can be, and frequently have been, faked. Photographs can also prove to be far more imaginative than any graphic illustration could be, as new color technologies have made it possible to superimpose images and present fantastic surreal images and illusions. Once again, the guidelines reveal a nonvisual orientation; later, under "technical qualities," this question is raised again, but only in phrases like "picture quality."

A question like "Is the organization clear and the presentation logical and coherent?" once again has little meaning when applied to nondidactic films, films which are imaginative and personal, or films which teach through the evocation of moods. "Logic" may be a confusing term to a reviewer who has not been prepared in cinematic terms. For the logic of poetry is what obtains in great films, not the logic of argument.

Previews is making an excellent contribution to the reviewing of curriculum films, but there can be little doubt that the guidelines need much improvement, expansion, and sophistication if they are to elicit filmic, cinematic observations on *content* itself.

The guidelines continue with a discussion of other aspects of films:

Technical qualities
(Be aware of creative innovations)

Aural: fidelity (clear or distorted), creative use of sound, narrator's voice.
Visual: style (dramatization, animation, etc.), picture quality, special effects, are sequences related and coherent, if reproduction of original work of art—is it authentic in regard to detail, color, depth dimension, size proportions?
Graphics: size, type, framing.
Script: appropriateness of expression, comprehensiveness.

It will be readily observed that there is an unstated and unqualified overlap between some of these items and content. Most importantly, the question of whether or not film is the appropriate medium for the message never arises specifically. Any film textbook could offer better suggestions about what to judge in terms of cinematic effects. All that seems to be required here is a gross judgment of whether or not sound is fuzzy, color is right, and narration is difficult to hear. These are important to remark, but surely not as important as some comment on the editing style, type of narrative structure, relationship of meanings, and unity of effect. As

a minor note, it might be important to recognize that few film reviewers could ever have the time to check on the authenticity of a reproduction of a work of art, unless they consulted the *original*, which might well be in another country.

Finally, the *Previews* guidelines come to the request for a discussion of utilization:

Utilization

For what age, grade, or special situations is it most suitable?
For what type or types of libraries is it useful?
Does it lend itself to group viewing with teacher or leader guidance or is it self-explanatory enough for individual use? Or both?
Is it controversial and/or specialized?
Should credits be given to individuals for areas of outstanding work? Should it be recommended for purchase?

Here we see that the ultimate and legitimate purpose of *Previews* reviews is to offer sound guidance to subscribers for purchase or preview decisions. But the question "Is it controversial and/or specialized?" again reveals the kind of oversimplification which presumes considerable sophistication on the part of the journal's voluntary reviewers. Controversial in what context? Specialized in what context? One of the most touted television films of recent years was *Roots*, which can be attacked as superficial, inaccurate, biased, inauthentic, dramatized rather than documented, and controversial in both intellectual and redneck circles. All of these criticisms do not diminish the impact and importance of *Roots*. The implicit warning in the word "controversial" in the guidelines is one of those red herrings which make it almost impossible to produce a review of a film which will have more than one month's relevancy. What is controversy today is tomorrow's indifference. The guidelines clearly need to spell out in considerably more detail the kind of comment which is expected of reviewers, especially since the question of "controversy" is, of course, legitimate and important; yet the space offered by a typical *Previews* review leaves little room to elaborate on how and where such controversy might exist.

A discussion of utilization in so brief a space also leaves much to be desired, but an examination of *Previews* reveals that, once again, many reviewers are ingenious, deciding for themselves about which clues to give the reader. There is by no means an isomorphic relationship between the guidelines and any given review, nor do the editor and publisher actually expect that there would be.

EFLA has always presented a strong statement by Emily S. Jones to its review committees, and, in fact, the revised edition of Jones's *Manual on Film Evaluation* stresses the difference between "evaluation" and "review" (*15*). Yet the evaluations made by the committees are turned into a type of review. At least, the vernacular of librarianship may be so debased by the "buyers' list" mentality that it may be almost impossible to clarify this situation. Jones observes, correctly, that "a review is one person's critical opinion. . . . A review reflects the tastes, experience, opinions, and prejudices of the reviewer" (*16*). A review, therefore, is sharply dif-

ferentiated from "notes," which are synopses; "appraisals," which are ratings according to a scale; and "evaluations," which are "the carefully considered opinion of a qualified group or committee, as to the scope, usefulness, and quality of a given film. The evaluation should state what the film is about, who could use it, for what purpose, and should give the evaluators' opinion of the value of the film to the suggested audiences" (*16*).

We can see that the evaluating group is concentrating on the utilization of the film, and is reviewing it for its ultimate purposes and audiences. EFLA, therefore, is perfectly justified in calling what others believe to be reviews, the *EFLA Evaluations*. It may be that this differentiation by Jones raises the most critical and important point thus far encountered: that librarians and media specialists are not seeking reviews, but evaluations. Even though the reviews in *Previews* are signed, and satisfy Jones's requirement that a review reflect one person's critical opinion, they may more properly be defined as evaluations for a given audience. Further research would be needed to discover whether or not the *Previews* reviews and the EFLA evaluations are, indeed, substantively different, and if they function, or are used, in different ways.

Jones quotes all of James L. Limbacher's excellent and thoughtful "Hints for Film Evaluation" (*17*). Limbacher intelligently structures his questions under the following major rubrics: Content Values, Psychological Values, Artistic and Technical Values, Social and Ethical Values, Entertainment Values, and Audience Reactions. The contrast with the oversimplification of the *Previews* guidelines becomes apparent in his section on:

Social and Ethical Values

1. If controversial, does the film give both sides of the story?
2. If not, is this fact so stated in the titles or by the narrator?
3. Is the film constructive? Does it encourage a feeling of responsibility toward humanity and the world?
4. Does it stimulate general good will? Is any race, religion, or profession held up to ridicule? If so, is there a reason for doing so?
5. Is the film truthful without distorting facts?
6. Does the film influence behavior toward a positive goal?
7. Could any misunderstanding arise from the film?
8. Are unusual examples presented as typical?
9. If sponsored, does it spend too much time in advertising? (*18*)

While certain assumptions about desirable behavior or the definition of "good will" may underlie these questions, at least they attempt to elicit from the reviewer or evaluator a detailed and careful analysis.

Space limitations prohibit the reproduction here of Limbacher's extensive list, but the reader will find his suggested questions a most useful focus for either film evaluation or film reviewing. For example, his questions include "Is it really a film or could it be presented just as well as a set of slides, a tape, a record or a filmstrip?" and "Does the film have good rhythm and pacing? Is the editing smooth and devoid of static qualities and poor matching?" By no means a perfect list of

questions on which everyone in the profession could agree, Limbacher's is nevertheless the most complete and useful set of guidelines available at this time.

EFLA uses "rating forms" during the American Film Festival juried viewings, and has changed these forms in recent years. The forms originally were geared to each of three categories of viewers, with separate forms for "film specialist," "subject specialist," and "utilization specialist." While these three types of viewers still are on each jury, the form is now one which recognizes that all three could have valuable opinions on aspects of a film outside their own specialization. Since EFLA is presently considering putting together an annual compilation of ratings—which are equated with reviews—from the festival, it is instructive to see what the ratings presently involve.

The form asks a juror to rate from "superior" to "poor" the following aspects: "1. Technical Quality: (a) script or concept; (b) structure (organization, continuity); (c) direction; (d) cinematography; (e) sound; (f) performance &/or narration; (g) editing." These brief categories imply that each reviewer has sufficient expertise to rate the photography and use of musical score or other sound in the overall quality of the film. Under Section 2, Content: "(a) suitability of presentation of the subject; (b) clarity of presentation; (c) originality/creativity of concept; (d) accuracy of facts (Answer to the best of your knowledge)."

Note that, once again, the idea of accuracy suggests that the reviewer, or juror in this case, will have an extensive subject knowledge. Since this is a jury which cannot search out inaccuracies during the time of the festival, and since the forms are handed in within minutes after viewing, it is clearly crucial that subject specialists be present on each jury.

Lastly, under Section 3, Utilization Potential: "(a) extent to which film stimulates interest in subject; (b) appropriateness for intended audience; (c) how does this film rate in relation to others on the same subject? Consider not only the films in this group, but others you have seen over the years."

The EFLA rating form also requests an overall rating and comments in a summary.

To ask about a film's "appropriateness for intended audience" once again defines the so-called reviewing or jury function as an evaluative one, geared toward the use of the film rather than intrinsic merit. This is legitimate not only because these reviews will function as a guide toward rental and purchase by public, school, and college libraries, but because no review, whether of a theatrical film or of a curriculum film, is written entirely without some concept of an audience. The pornographic film, to cite an extreme example, is undoubtedly rated purely on the basis of audience reaction. The "art" film—we could use Godard's *Weekend* or Bergman's *Cries and Whispers*—is also rated on whether or not a general audience will be able to respond, and if not, what types of audience will find this or that film interesting, exciting, or entertaining.

Judging from many reviews in *Booklist*—from their long and often lively comments on filmstrips, for example—it would seem that their guidelines emphasize content, subject, and descriptive analysis, with a heavy emphasis on utilization.

The impression is definitely that *Booklist* is doing precisely what it says it is doing: offering a current guide to materials worthy of consideration for purchase. The very presence in *Booklist* of any review already indicates that a favorable verdict has been attained. The reviewer therefore is in the position of offering extensive subject details, telling what is in the film, and sometimes how it is put together, almost as if to save the reader the necessity of previewing the item. Since many media specialists agree that previewing multimedia products is essential to an understanding of how to use them in any context, this implication of *Booklist* reviews should be relied upon with caution. A "subject" analysis is not a film experience.

Back in 1963, at an EFLA Workshop on Evaluative Criteria, Jack Ellis suggested:

> In criticism of film, four questions must be contained within the review:
>
> 1. To what extent does the film take advantage of the medium? Does it make use of the qualities peculiar to that medium?
> 2. To what extent does the film fulfill the prescribed purpose?
> 3. To what extent has the artist created a complete and consistent world? Are all parts of his work complete and necessary?
> 4. Is the created world large or small? Is it well-made or great? Does it have a brilliance that raises it above the average? (*19*)

The virtue of these questions lies in their applicability to film as art. Whether or not any of us can agree on definitions of "art," and the problem has plagued philosophers for centuries, it might be important that reviewers attempt to see that many films fulfill the requirements of a self-enclosed creative universe. Subordinating all attention to imagination with the excuse that utilization is all, reviewers may be compounding the didactic emphasis of many short films produced today.

Recommendations by Producers and Consumers

The following represents a cross-section of responses to the questions: (*a*) What would be the ideal review medium? (*b*) What should be the qualifications of reviewers? and (*c*) How should readers use reviews? (*20*).

FEATURE FILMS

Albert Maysles, coproducer of outstanding nonfiction feature films, has been a controversial figure in a problem-filled field. Since the Maysles films arouse so much controversy, it is his belief that the ideal review medium would be "democratic." It would permit producers to defend their work, to challenge the establishment critics. It would permit divergent opinions and open a dialogue between the producer and the public. The major newspapers and general magazines should not constrict opinion. As for the qualifications of reviewers, he stressed "a humane disposition, intelligence, lack of prejudice." Apparently the major difficulty for reviewers in criticizing the Maysles productions is the lack of easy categories in

which to place the films. He noted that the background of most reviewers of theatrical fiction as well as nonfiction films is literary, not filmic, and is biased in favor of the fictional, so that nonfiction features pose a serious challenge to their competencies.

It may well be that a culture lag exists between the appearence of any new art form and critical judgment about it, and Al Maysles agrees that this may be the crux of the matter. Nevertheless, reviewers should assert their faith in people and their ability to undertake and withstand new experiences.

SHORT FILMS

"Films shorter than 60 minutes" is one definition of a film not considered a "feature." Many of these short films are produced with the school market specifically in mind. About this type of film, Nadine Covert's comments indicated that she favors using a spectrum of opinion. "It's healthy to have a variety of buying media, since individual reactions are subjective. You need to read a variety of reviews and see how they relate to your own institution."

The greatest difficulty in reading reviews is simply in keeping up. Covert is adamant that films must be previewed, and that if a purchase must be made without a preview, many reviews should be consulted.

James Limbacher emphatically favors coverage of all multimedia productions. "*Every* film should be reviewed and the review published somewhere every month, and the work should *not* be done by committees. I would rather have the opinion of one person, or two reviews side by side." Limbacher believes that the reviewing of even the poorest items would help librarians avoid purchase under pressure from manufacturers' salespersons or advertising.

Masha R. Porte believes: "Nothing but reviews, that's what a perfect review journal would be." Ed Peltier agrees, suggesting that children's films need separate and special attention. Peltier wants film library journals to stick with the "nitty-gritty" level of reviewing, and not to become involved in film theory. He also is of the opinion that public libraries would benefit from workshops on reviewing techniques, if time and staff were available. Both Porte and Peltier were emphatic about using reviews only as a guide to previews. They suggested that the qualifications of most public librarians could benefit from further education in the utilization and evaluation of films and other multimedia items.

Two producers, who wished to remain anonymous, argued that the curriculum emphasis of most library literature was seriously restricting their potential audience. Reviewers need education in the experiential aspects of film. Awards do not particularly help the sale of a film, not as much as an intelligent and well-rounded review. The ideal review medium would cover all items critically, not simply in an annotation of subject.

All those interviewed agreed—if films are to be judged primarily in terms of their utilization in specific contexts—that review journals should offer a variety of opinion, that subject expertise is a crucial issue, and that the presence of an au-

dience at an evaluation/review session would be useful. These are possibly utopian ideals, but the "variety of opinion" criterion was stressed many times.

THE ART FILM—SHORT FEATURES

For several years, EFLA has mounted a showing of "Film as Art," selected by specialists like Amos Vogel or D. Marie Grieco. These films represent the personal vision of film makers like Jonas Mekas, Robert Breer, Bruce Connor, Stan Brakhage, and other independents. Public libraries are demonstrating increasing interest in programming such films, while colleges and universities have long displayed them as part of ongoing film studies. A consensus of opinion suggests that considerably more emphasis should be given to these films in review journals. In the absence of regular reviews, librarians should be aware that critical articles frequently appear covering the activities of these avant-garde and poetic film makers, especially in the art journals, where they are judged as part of the spectrum of the visual arts.

Summary and Conclusions

If there is any one conspicuous truth about reviews and reviewing in library literature, it is that critical review—equivalent to the literary essay—is almost nonexistent, while the well-written evaluation for utilization purposes is the height to which the professional aspires. There are practical reasons which govern the dominance of evaluations and "buyers' list" notations: librarians and media specialists are most frequently involved in the rental or purchase of films and other multimedia materials for the sake of using them in quite specific educational or institutional contexts.

Like many film critics who have been taken to task for this fault, many librarians come out of a literary background, without adequate preparation to judge the complexities of a visual and aural production. The guidelines prepared by some useful "review" journals reveal this emphasis on the literary and on "content" or "subject." While many excellent evaluators contribute to the so-called review journals, the stress on subject dominates. Subject expertise, therefore, is highly desirable for judging and reviewing any curriculum-oriented film. This subject expertise seems to be more in evidence than expertise about the filmic qualities or media qualities of any item.

Yet it must be acknowledged, in the words of Calvin Pryluck:

> Despite the prodigious energies expended in an experimental research tradition that stretches back for more than fifty years and a tradition of film aesthetics and criticism that is even older, we still have relatively little firm agreement on the answers to either aesthetic or pedagogic questions about film (*21*).

Disagreement about the nature of film, about how it affects audiences, about its essential construction and grammars, seems to indicate the high desirability of a

variety of opinions being made available to potential purchasers of 16-mm film or multimedia items. It is the experience of the present writer that exposure to discussion about films, the opportunity to study film technique, and the structured encounter with film studies, all raise the reviewing competency level of evaluators to a laudable degree. Sensitivity to the ways in which medium and message interact is acquired through the development of what has been called "visual literacy," for want of a better term. But that sensitivity, as well as a humane and open flexibility, a lack of prejudice, and the ability to write crisp and fluent English (or any other reviewing language) would seem to be basic requisites for reviewing.

Subject expertise—or a familiarity with age levels, audience responses, and acceptability levels—cannot substitute for the necessity to *see* a visual poem, and to be able to convey its mood and intrinsic excellences. Preparation in the visual arts would seem to be a prerequisite for reviewing films of personal vision. Overcoming the literary bias of reviewers, librarians, and much of the public is the greatest single difficulty and the greatest challenge.

Since the quality of reviews and the preparation of reviewers are clearly interconnected, the implications for library and media education are profound.

What should continually receive the critical attention of the profession is a long list of questions concerning who owns review journals, how reviews are used, how reviews affect distribution, the relationship of good and bad reviews to advertising within journals; and many other questions relating to the political, economic, and intellectual impact of what seems at first to be a wholly innocent and objective activity: the reviewing of films and other forms of multimedia communication.

REFERENCES AND NOTES

1. "Nonprint" is an unfortunate and almost meaningless term which betrays the print bias of the profession. To say that a medium is nonprint is like saying that milk is a "nonmeat liquid."
2. Interview with Albert Maysles, New York, June 1977.
3. This conjecture is made by the present writer, not by Maysles.
4. See Note 2. Kael was questioning the authenticity of the cast of the film.
5. This source, a producer of fine independent films, asked to remain anonymous for this and other information he supplied.
6. See Estelle Jussim, "The Research Uses of Visual Information," *Lib. Trends,* April 1977.
7. *Choice,* February 1976, p. 1552.
8. The present membership of EFLA is 1,800, and many of these attend the annual conference, along with students of film, independent producers, and sales personnel from major distributors. Attendance varies daily.
9. *Booklist* editorial policy, quoted on every masthead page.
10. For understandable reasons, these interviewees asked to maintain anonymity.
11. EFLA, *Program for the 19th Annual American Film Festival,* 1977, p. 5.
12. Interview with Nadine Covert, New York, June 1977.
13. It should be remembered that librarians and media specialists ordinarily have no interest in 35-mm gauge film, which is used for theatrical projection; 16-mm is the standard academic and library use format.
14. Review by Nolan Lushington, *Film News,* 34(2), 18 (March/April 1977).

15. Emily S. Jones, *Manual on Film Evaluation*, rev. ed., Educational Film Library Assoc., New York, 1974.
16. Ref. *15*, p. 5.
17. James L. Limbacher, as quoted by Jones, Ref. *15*.
18. Ref. *15*, p. 14.
19. Jack Ellis, "The Question of Criteria," in *Film Evaluation, Why and How? A Report on the EFLA Workshop, January 24–25, 1963, Chicago, Ill.*, EFLA, 1963, p. 5.
20. Approximately 30 people, representing all aspects of film use and production, as well as film reviewers and film review editors, were interviewed at the EFLA conference, June 1977, New York City. They were selected on a random basis, but no claim is made that this is a "scientific" sample. However, the wide geographic distribution of the interviewees, the differences of their institutional bases, and the agreement with prior random interviews at other conferences suggest that the opinions registered here are a valid cross-section.
21. Calvin Pryluck, *Sources of Meaning in Motion Pictures and Television*, Arno Press, New York, 1976, p. 5 (Arno *Dissertations on Film* series).

ESTELLE JUSSIM

REVIEWS AND REVIEWING OF SCIENTIFIC AND TECHNICAL MATERIALS

Introduction

Although scientific literature and materials are available in various formats and types, this discussion concerns itself mainly with reviews and reviewing of scientific books. The word "scientific" is used also to cover the "biomedical" and "technical" aspects.

Historically, like reviewing of other subject materials, scientific reviewing is a relatively recent phenomenon, having come into use in the late 17th century. It is a process of scholarly interaction among members of the scientific community, and it has existed since the beginning of scientific journalism. As stated by Bry and Afferbach:

> The earliest journals, launched in the major European countries in the later part of the 17th century, consisted primarily of book notices. They extended through print the endeavor of the academies to acquaint the learned with each other's work, and thus became one of the channels of scholarship through which the scientific community constitutes itself (*1*).

To facilitate this discussion, it is necessary to define a review as a descriptive and/or critical annotation of a given work, generally not supplied by the publisher or by the editorial staff of a journal. Thus, in this discussion, no attention is given to "Book Notes," "New Books Received," etc., in the reviewing media.

Although book reviews serve multiple functions, two major ones can be identified: *descriptive* and *evaluative*. These two functions often belong together. Scientific book reviews can be used both to educate and to inform the working scientists

of the current significant publications both in and outside the fields of their immediate interest areas. Due to the descriptive and particularly to the evaluative characteristics of reviews, they are invaluable tools for scientific and technical librarians in book selection and collection development. It has been said that:

> In recent years, widespread budgetary cutbacks concomitant with an information explosion make judicious, critical and systematic book selection more necessary than ever. Thus, book reviews prepared by subject specialists are more important to librarians than before. In the fields of medicine, science and technology, the usefulness of book reviews to librarians is more evident since most of these librarians do not have strong enough backgrounds in these subjects to qualify themselves as critics or judges (*2*).

There are various types of informational materials which can be used for book selection purposes, such as the direct-mail advertising circulated by the publishers, the advertising materials in scientific journals, etc. Yet, a review in a subject journal by the subject experts is usually far more persuasive and indicative of the coverage, treatment, level of sophistication, and value of a new book than the nonevaluative and biased advertising materials (*3*).

The Scientific Reviewing Process

The noted late historian of science, George Sarton, stated that:

> There are many sides to every question and as far as the reviewing of books is concerned, there are at least five points of view which are obviously different: the points of view of the author, of the reader, of the editor, of the publisher, of the sponsor (*4*).

Thus, a good reviewer has to be able to understand all these points of view and honestly and faithfully work on the book under review. Sarton also succintly noted that all books—good, bad, scholarly, and popular—pose problems for the conscientious reviewer (*5*). To facilitate our discussion on the current state of the art of scientific reviewing, it is necessary to first discuss the following aspects.

GOOD vs. BAD SCIENTIFIC REVIEWS

The main points of a good review were incisively presented by Sarton (*6*), who was also the editor of *ISIS*, one of the most important journals in the history of science. These were conveniently summarized in Young's article:

> A review should describe the book at hand, but also evaluate it in terms of the subject with which it is concerned. The author's qualifications, purpose in writing the book, research ability, and success in achieving his purpose should be assessed. The reviewer should render a considered judgement of the book's overall merit. Wavering impartial reviews should be avoided (*6,7*).

Similarly, a good review for technical audiences was defined by Borchers as:

> . . . one prepared by an expert in the particular field. It contains essential specific information; it evaluates the author with his book; it classifies and summarizes the book; it places it in its proper frame of reference; and it presents an accurate, trustworthy, critical examination in an acceptable style (*8*).

It is clear then that a good review is not just descriptive and critical. It is also substantial and instructive. Naturally, a good review is expected to be a fair review, with its criticisms and praises substantiable and nonpersonal. In the fields of science and technology, the knowledge base is clear, definable, and substantial; thus it is common to find reviews which are critical of the materials included in the books reviewed without being critical of the author personally.

GOOD vs. BAD SCIENTIFIC BOOKS REVIEWED

There is always an interesting question: "Should reviews be mainly given to good books?" Each review medium can have any one of the three answers—"yes," "no," and "yes and no." Thus, there is really no consensus among editors of reviewing media, who set up the general policy on items to be included for reviewing.

If one accepts Sarton's idea that "the purpose of public reviewing is simply to communicate to the public the results of one's analysis, and there is a very important social function to help the public readers to form their own judgement" (*6*), then it seems natural to expect that all types of scientific books—whether good or bad or in between—should be reviewed. Dr. Charles G. Roland, M.D., former senior editor of the *Journal of the American Medical Association* (*JAMA*) shared his thoughts about medical writing, particularly on reviewing bad books. He stated:

> Everyone knows that a good book ought to be reviewed by appropriate journals. It may seem just as obvious that a bad book should not be reviewed. But I think this decision often is wrong, even though it does fit the convenience of the book review editor.
>
> As you know, I fill that role for another journal. And as book review editor my job often would be simpler if I could discard all bad books—simpler, because there is such a plethora of books that coping with their numbers is a discouraging and unceasing struggle. Besides, space for book reviews usually is limited, so the pressure is strong to review only "good" books. . . .
>
> If it's important for readers to be directed to good books, surely it is at least as important that they be warned away from bad books. And some books are so bad that no one but a literary teratologist ought to study them. For books less bad, it seems important to warn readers about weaknesses and limitations.
>
> I believe that a bad book that has been published by a major medical book company—and good companies can produce bad books—ought to be reviewed. In this instance and indeed in all the hypothetical situations I have sketched, the reviewer has an obligation to make constructive criticism where this is possible. Because even bad books sometimes appear in second editions; and those books may be made better if the authors have well reasoned critiques to assist them when they are revising their work (*9*).

In Roland's opinion, there are generally two categories of badness in scientific books: factual inaccuracy and defective presentation, and bad writing and faulty logic. As he said:

> Patently, if a book is accurate and well presented it is likely a good book; if it is inaccurate and badly presented it is a bad book. The difficulty arises, as in all things, in the middle zone—the accurate book badly presented, and the inaccurate book well presented. These are the dangerous ones (*10*).

However, realistically, it is impossible to review even all good books. Due to the limitation of review space in scientific journals, the decision for inclusion has been haphazard and nonsystematic. The general practice for most scientific journals has been to provide reviews of a selected few of those included in their long list of "new books received." These few titles generally are of greater public interest for various reasons, such as author's reputation, importance of the series publication, topic of current interest, interest to the reviewer, etc. Because of these factors, more good books tend to be reviewed, and many published works which deserve harsh criticism tend to escape the critics' sharp analysis and therefore the necessary public scrutiny.

FAVORABLE vs. UNFAVORABLE SCIENTIFIC REVIEWS

As discussed in the Introduction to this series, several studies—such as Merritt (*11*), Champion and Morris (*12*), and Chen and Galvin (*13*)—have shown that in almost all fields there are more positive reviews than negative ones. It should be pointed out that all the statistics available to us cannot and should not be compared without considering the various related variables. For example, the editorial policy discussed above—on whether to review good books or not—has a tremendous effect on the number of favorable reviews produced by a given reviewing medium. As Gardner stated, "most review only the 'best' within the journal's subject field, a practice causing most reviews to be favorable" (*14*). However, there is reason to conclude that a scientist is much more used to writing, and more willing to write, what may be considered an "unfavorable" review based on the scientific grounds of his/her own friend's work than is a professional in a nonscientific field.

Chen and Galvin found in their study of the reviewing of library literature that there was a very high percentage of favorable reviews (*13*), and many reviewers chose to utilize the review space to write about their friends' (authors') background and reputation rather than provide unfavorable comments on their works. Similar results were found in Merritt's study in 1958 of the journals included in *Book Review Digest*. He stated:

> There is a "chorus of praise," a reluctance to condemn, and a strong tendency to say nothing one way or the other (*15*).

Yet, in the fields of science and technology—since criticisms and comments mostly

pinpoint the facts, methods, and theory—it is quite common to find unfavorable reviews of books written by the reviewers' friends and colleagues. For example, reviews such as the one appearing in a recent issue of *Physics Today* are encountered frequently:

> Unfortunately I find the book lacking in adequate attention to pedagogy, and it contains an unfortunate conceptual error in the last section. Imprecise wording . . . makes for difficulty in reading. . . .
>
> The conclusion is that, while the area covered by this book is of considerable interest to engineers and physicists concerned with modern optics, most of us can probably afford to consult the earlier sources while we wait for a better review (*16*).

GUIDELINES FOR SCIENTIFIC REVIEWERS

To assure the quality control of reviews and to reduce the number of unfair, unethical, biased, and irresponsible reviews, most scientific reviewing publications provide an "instruction sheet" or "guidelines" to reviewers. The contents of these guidelines vary greatly in terms of complexity, precision, and standards. Some of them are as detailed as the one illustrated in the section dealing with the reviews and reviewing of multimedia materials. Some are quite simple. For example, one of the major biomedical reviewing journals, *New England Journal of Medicine*, essentially leaves the extent and the quality of the review to each reviewer, who is selected from a pool of specialists in the medical fields. The only guideline sent out by the book review editor is a short letter which includes the following paragraph on the format and the length of the review:

> Please use the enclosed sheet for your review, which should not exceed 1½ to 2 pages, typed with double spacing. An additional plain sheet may be used if necessary. Kindly mail the review to us in the enclosed envelope within six weeks. If you find that the book does not warrant a review, please inform us of the fact on the same sheet.

Some scientific book reviews are included in library reviewing media and reference tools, such as *Choice* and *American Reference Books Annual* (*ARBA*). In these cases, general guidelines are followed by reviewers of both scientific and nonscientific books. For example, the two-page "Instruction Sheet" given to all *ARBA* reviewers provides information on procedural matters; on the quality, content, and length of the review; and on the bibliographical descriptions. The following is an excerpt on the quality, content, and length of review:

> Most reference titles will require only one sheet of the review form (150–250 words, double-spaced, including bibliographical description). For exceptional cases (such as multi-volume works, important encyclopedias, etc.) reviews may be longer; however, two sheets should be considered the maximum length. Occasionally reprints or revised editions will be adequately served by shorter reviews (100–150 words); a note sent with the review form will indicate the need for either

abridgment or expansion. The length of the review should roughly correspond to the relative importance of the reference work.

The editor does not advocate highly structured reviews but rather appreciates the flexibility of a creative approach. However, a certain degree of uniformity is both necessary and desirable. As a general rule, the factual description of a work precedes critical comments. Since our aim is to review all or practically all reference books published or distributed in this country, many of our reviews are bound to be critical, reflecting the fact that not all reference books published can meet professional criteria. In formulating critical comments, it might be worthwhile to provide a comparative evaluation of a given work in relation to other works of a similar nature; we hope, of course, that critical comments will be well documented and will reflect the overall usefulness of a given reference work. Please also note that it is usually not necessary to conclude the review with specific recommendations for purchase, as found in most other library reviewing journals. On the whole, we believe that an adequate description and evaluation of a reference book will speak for itself, enabling ARBA's users to make their own decisions.

References to published reviews in leading library reviewing media will be added by the editor of ARBA (*17*).

THE ROLE OF SCIENTIFIC BOOK REVIEW EDITORS AND REVIEWING POLICY

The book review editor plays an important role in the dynamics of the scientific reviewing process. He/she makes decisions on "*who* will review *which* book at *what* length, at *which* location in the journal" (*18*). The decision-making process naturally involves the objectives and the intended audience of the review publication. In other words, the book review editor can provide answers to all sorts of questions on book reviewing policies and activities, such as the following:

1. The extent of review coverage; that is, how many book reviews per issue? Where do they obtain reviewed books?
2. Emphasis of coverage; that is, should the review section put heavy emphasis on good books? On books of current interest, current discoveries, etc.? What are the characteristics of reviews, i.e., evaluative or descriptive, or both?
3. The space allocation of reviews; that is, how many pages per issue? What is the mean average length of a review?
4. The selection of reviews; that is, what are the criteria for competence? What are the qualifications required?

The most pertinent study addressing this topic is Bonn's study of the editors of 50 journals selected from all fields of science. Nine specific questions were asked about their book reviewing policies and activities (*19*). These 50 titles include library periodicals that carry reviews of science books—*Library Journal, New Technical Books,* etc.; general science journals—*Science, Scientific American,* etc.; society journal publications—*Physics Today,* etc.; and popular scientific journals for amateurs—*Radio-Electronics, Rocks and Minerals,* etc. The following is a condensed summary of Bonn's findings:

1. By and large the well-established journals receive review copies of all new books in their fields quite automatically as they are published. . . .
2. Only a few journals attempt to review all the books they receive, although a number make an effort to list those not reviewed if they are in the subject field. . . . The journal's primary responsibility is to its readers who look to the journal for information and for advice; books reviewed, therefore, should be of interest to the reader and at his level, they should be in the journal's subject field and they should be worth-while . . . in the opinion of the editor, the reviewer, or some other expert. . . .
3. In almost every case, the kind of review and the treatment the book gets depend on the reviewer, on the book, and on the space available, if it is to be reviewed in the first place. . . .
4. Reviewers are selected on the basis of competence first, then interest and availability, and no publisher-prepared or other contributed reviews are ever used. . . .
5. The level or kind of reader . . . would vary from journal to journal. . . .
6. Time lag varies from journal to journal depending largely on publication frequency. . . .
7. The average number of science books reviewed by each of these journals is around fifty to sixty per year, but it varies from one year to the next for most of them. . . .
8. All of them expect to continue to review books as they have been (*19*).

Although the survey was made in 1960, it is expected that the scientific book reviewing policies and activities in these journals have not changed substantially. The questions related to time lag and quantitative review coverage have been explored in great depth in Chen's comprehensive studies (*2*), and the up-to-date results are presented later in this article.

REVIEWERS' QUALIFICATIONS

A book review cannot possibly be in print without its creation by a book reviewer. Thus, the book reviewer plays a crucial role in the whole process of reviewing. It has generally been considered a more laborious task to review a specialized scientific book than to review a novel or popular fiction (*20*). Sir Solly Zuckerman of Great Britain stated that:

> A professional critic of novels and biographies presumably experiences little difficulty in turning from one to another book in some wide field of literature . . . but few scientists can move with assurance outside their own fields of narrow expertise (*21*).

The scientific book reviewer must pay much more attention to the accuracy of the information presented and the validity of the ideas or methods discussed. This tends to require a subject specialist rather than a general professional such as a librarian. Lester S. King, M.D., the editor of *JAMA*, very succintly summarized the qualifications of a good reviewer:

> He must know the subject under discussion—i.e., must be able to speak with authority derived from proficiency in the field. He must be able to appreciate the

> validity of the points made, perceive the degree of adequacy in coverage, discriminate what is new and original from the derivative, evaluate the significance of the new. And he must be able to recognize errors.
>
> . . . [he must] ideally have certain broader insights, a certain perspective which can bring the particular subject into relationship with the wider fields. . . . The specialist who is too limited, who cannot see beyond the immediate confines of his own narrow field, will not make a good reviewer. . . .
>
> Then, the reviewer should be a competent writer. This has a twofold aspect. He should possess standards of good writing so that he can consider meaningfully the stylistic merits of the book he is reviewing; and then he himself must be able to write well and express his ideas appropriately . . . (*22*).

It is clear then that well-qualified scientific book reviewers are scarce, and furthermore, as Dr. King lamented, "Of those that are well qualified, a distressingly high percentage is not willing to take the time and trouble that a good review requires" (*23*). This unwillingness is mostly due to the fact that the scientists are pressed for time. They generally give much higher priority to other activities, such as research, conferences, teaching, publications, etc., than to book reviewing. Sarton commented that "many people have enough energy to continue a task, and even to carry it to completion, but not enough to begin it" (*24*). There are many scholars who agree to review a book and fail to do so. Sarton considered, from the editor's point of view, that much damage is done by these "faithless reviewers." Gardner found in her study that the percentage of reviews written by reviewers who wrote only one review in 1962 was very high, ranging from 50% of the physics reviews to 96% of those for astronomy (*25*).

THE ROLE OF THE SCIENTIFIC BOOK PUBLISHERS

While book reviewers and book review editors have their respective responsibilities, there are responsibilities for publishers too. Particularly in the fields of science and technology, time is a crucial factor, and the book publishers must do their work *quickly*. A former editor of *Special Libraries* charged that some publishers seemed to regard specialized journals as second-class members of the book world, and rarely provided galleys or review copies of new books in advance of publication as they did to the popular reviewing media; and that publishers were often guilty of not taking the trouble to search out the specialized periodicals that should review their specialized titles (*26*).

In discussing the role of scientific book publishers in reviewing, it seems appropriate to concern ourselves with the "fairness" and "honesty" of book reviews appearing in the trade publishers' own reviewing journals. One former editor of *Technical Book Review Index*, Mr. Anthony Martin, observed that the greatest dishonesty was perpetrated by those American and British publishers of trade journals who also publish books: very rarely were their books critically reviewed in their own journals (*27*). One wonders why this kind of bias exists? Do reviews actually affect sale? This is really a debatable question. In reading reviews provided by publishers, one ought to have the common sense to expect that no publisher would say bad things about their own products in a critical way. On the other hand,

bad reviews—to publishers—are better than no review at all, and in most cases, "the book sales seem unaffected by the quality of reviews" (*28*). The former senior editor of *JAMA*, Dr. Charles G. Roland, commented that even bad books sometimes appear in second editions (*9*). Due to the unintentional publicity and advertising function of the book reviews, it is possible for one to single out the major biomedical, scientific, and technical book publishers from the statistics available on the number of books reviewed in these subject reviewing media, as carefully illustrated in Chen's book (*2*), the results of which will be summarized later.

Studies on Scientific Book Reviews and Reviewing

In order to enable science librarians to utilize the available book reviews effectively, it is necessary for them to be fully aware of the status of scientific reviewing in the fields of their interests. A complete survey of the literature reveals that there have been a number of publications on scientific reviewing in the last several decades (most of these are included in the Bibliography at the end of this article). Several of these publications offer interesting observations on the subject by editors of medical (*9, 22*), scientific (*4*), and special library (*3, 29*) journals. The rest of the publications are a handful of theses and studies which pertain to the reviewing of scientific and technical books. The following is a brief summary of each:

The earliest studies were three unpublished master's theses written during the period 1937–1940 (*30–32*). Reviews in four chemical, six engineering, and five biological journals were studied.

In the 1940s, Wilson studied medical book reviews of five selected medical journals (*33*); 62 journals indexed in the *Technical Book Review Index* were studied by Field (*34*); time lag in scientific and technical book reviewing was investigated by both Schutze (*35*) and Culver and Long (*36*); and the reviewing of 22 industrial chemistry books was explored by Nelis (*37*).

In the 1950s, Schneider's thesis dealt with reviewing of children's science books in five library reviewing media (*38*); Zimmerman studied the reviewing tools used by the technology departments of 38 public libraries (*39*); and Merritt studied the reviews indexed in the *Book Review Digest* (7 of the 81 journals indexed related to the physical sciences) (*11*).

In 1961 Bonn published his survey results on book reviewing policies set by the editors of 50 scientific and library journals which cover reviews of general science books (*19*). The summary of these results has already been provided in an earlier part of this discussion. In 1964 Gardner provided a systematic M.A. thesis study of the book reviewing in 46 American physical sciences journals—10 in mathematics, 2 in astronomy, 13 in physics, 10 in chemistry, and 11 in geology (*14*). In the same year, another thesis study at the same library school was made of 51 books in 10 selected medical journals (*40*). An analysis of selected reviews of science books published in 1968 for junior high students was made by Christon in 1969 (*41*).

In 1970 Sadow surveyed briefly 25 books reviewed in *New Technical Books* and

Technical Book Review Index (*29*). In 1974 Graff presented her master's thesis on book reviewing in the literature of surgery (*42*).

From the above summaries, it is obvious that—although all of these studies provide science librarians interesting and needed insights into scientific reviews and reviewing—none of them are up to date, comprehensive, or broad in scope. All of them are limited to a study of either a small number of books reviewed or to a handful of journal titles. However, biomedical, scientific, and technical book reviewing has been the subject of not only recent but also intensive studies by the author, and thus it is the most comprehensively and systematically scrutinized area among all types of general and specialized reviews and reviewing (*43*).

Chen conducted four independent investigations on all aspects of medical, scientific, and technical reviewing, that is, general biomedicine, clinical medicine, science and specialized subjects, and engineering. All four initial studies were conducted during 1972 and 1973 and were based on a massive amount of data collected on reviews appearing in a large number of reviewing journals either in 1970 or 1971. For example, the initial study was a thorough investigation of the 3,347 reviews of 2,067 biomedical books which appeared in 54 general biomedical reviewing journals. These 54 titles represented the total number of reviewing media among 285 general biomedical journals. Of all these studies, only the first study was reported, in both *Nature* and the *Bulletin of the Medical Library Association* (*44–49*), prior to Chen's 1976 book entitled *Biomedical, Scientific and Technical Book Reviewing* (*2*). This book is essentially a composite of her four initial projects, together with updated studies conducted in 1974 and 1975. Altogether, close to 1,000 medical, scientific, and technical journals were examined; 168 reviewing journals received in-depth scrutiny initially, and 148 of these 168 periodicals were investigated again 2 or 3 years later. Chen's book identifies the major biomedical, scientific, and technical book reviewing journals in terms of their quantitative coverage of reviews; explores the effectiveness of the review media in terms of speed of reviewing, comprehensiveness of review treatment, and authority; points out the duplication patterns in book reviewing among these media; identifies the major American and British biomedical, scientific, and technical publishers in terms of their quantitative production of book titles reviewed; and explores the price trend of biomedical, scientific, and technical books reviewed. For the readers' convenience, several highlights of her up-to-date findings are presented in the latter part of this discussion.

Problems In Scientific Reviewing

Many of the problems in general and subject reviewing also exist in scientific reviewing. One of the major difficulties is the bibliographic control problem. One zoologist commented:

> The large number of reviews indicates that they are useful, but their unsystematic arrangement, the great variety of publications issuing them, and the general lack

> of indexing make them a difficult source of information regarding any specific book (*50*).

The quality of the reviews is another problem. Scientific reviews can be, at their best, excellent and authoritative, although in fact their quality varies considerably (*51*). Some of the possible reasons have been discussed earlier, for example, the top-rated specialists tend to view book reviewing as their low-priority activity, thus it is difficult for the average scientific reviewing journals to obtain reviewing service from top subject authorities. The authority of a scientific review is closely related to the reviewer's qualifications. A signed review is likely to carry more weight than an unsigned one. However, according to an old tradition, reviews appear in many leading English journals without signature. For example, *Lancet*—the most productive, quantitatively, biomedical reviewing journal—carries no signed reviews.

The comparative scope of reviewing coverage among all fields of science and technology has also been a problem. Some fields, such as astronomy, are poorly covered, while biology and medicine are quite adequately provided with book reviews. Similarly, it has been difficult for scientists and science librarians to locate reviews of foreign publications, since the great majority of scientific reviews are concentrated on American imprints.

The bibliographic citation information of books reviewed varies from journal to journal. It is generally complete as to author, title, place, and publisher. The most common omission is date of publication, as found in Gardner's study (*52*). This is particularly serious with reviews appearing in many engineering reviewing journals. Another omission is the price of the books reviewed. Some other frequently found difficulties are: citing conference publications by book titles, and by editors rather than the titles of the meetings; citing foreign titles in English without any reference to their original titles.

The length of a review is not exactly a problem in scientific reviewing, nevertheless, several questions such as the following are frequently raised:

1. Is a longer review necessarily a better one?
2. What is an ideal length for a review in order to provide adequate evaluative information?

In most cases, scientists seem to agree that "it is better not to write too long a review of a book, for a short review is more likely to be read than a longish one" (*53*). Sarton contended that it is difficult to answer the question about the optimum size, because the situation varies in each case. He thought that it should be possible to do justice to almost any book, to give sufficient description and appreciation of it, in a thousand words or less. While Sarton could be thinking of short reviews in terms of a thousand words or less, the editor of *JAMA*, Lester S. King, stressed even more strongly the need for short reviews. He stated:

> The good book review is a short essay. The actual length is of secondary importance. A well-written essay of 250 well-chosen words may constitute a superb book review, and rarely, in medical journals, need a review exceed 500 words.

> Indeed, a review of only 50 or 60 words may serve admirably. . . . By careful choice of words the good "60-word review" (it may be less but not more) will catch the reader's attention, indicate the contents of the book, and provide an evaluation. And a carefully worked out "In Brief" will often show the inadequacies of a longer review (*54*).

This observation is certainly in contrast with the generally accepted length of reviews appearing in some well-known journals, such as *Science*, which had a mean average length of 751 words in 1971 and 900 words in 1972/73, according to Chen's studies (*55*).

By far the most serious problem in scientific book reviewing is that of time lag. As Chen stated:

> The value of a reviewing journal is inversely proportional to the length of time that customarily elapses between publication of a new book and the appearance of its review in that journal. This is particularly true in the fields of medicine, science, and technology, because currency of information is essential to investigators in these fields. Materials are very frequently requested, consulted and cited even before they are published. Some books may even be outdated before they are off the press (*56*).

While "promptness" of the appearance of scientific reviews is a necessity, Chen lamented that the time lag problem is not only unsolved but has grown worse than ever. Scientific reviews of the 1970s have longer time lags (with a mean time lag over 10 months) than those in the 1940s (*57*).

Duplication patterns in scientific book reviewing are also interesting topics. Questions to be considered here include:

1. Do the same scientific books recur in reviews?
2. Which journals tend to duplicate each other in book reviews?
3. Are all these reviewing journals of equal importance to science librarians?

Chen's studies found that the duplication patterns among scientific journals vary quite substantially, from 35% for biomedical reviewing journals to 83% for general science journals. Negligible duplication in engineering journals was found (*58*). Thus, it is obvious that there is no systematic way to show why and how duplication of review coverage occurs among review media.

Some of the above-mentioned problems in scientific reviewing frequently occur in conflict with each other. For example, some scholarly reviewing journals with longer reviews tend to have longer time lags; and some scientific journals often "sacrifice immediacy to reliability" (*59*).

Sources of Scientific Reviews

Scientific reviews can be found in a great number of different sources. Basically, these sources can be classified as two different kinds of publications: indexes and reviewing journals.

INDEXES

Scientific book reviews are indexed in numerous ways. However, the two most obvious ones are: (*a*) periodical indexes, and (*b*) separate serial book review indexes.

Periodical Indexes

Both general scientific indexes (such as *Science Citation Index, Engineering Index, Applied Science and Technology Index*) and specific scientific subject indexes (such as *Mathematical Reviews, Applied Mechanics Reviews, Bioresearch Index, Chemical Abstracts*) include short but critical book reviews which usually state the strengths and weaknesses of the books reviewed. These indexes are generally useful to scientists as detection aids for books relating to their own interests, but they are not frequently used by science librarians for either book selection or collection development purposes.

Separate Serial Book Review Indexes

The type of review indexes that are of greater use to librarians than the periodical indexes are generally issued as separate serial publications. The most commonly used general book review indexes are *Book Review Digest* and *Book Review Index*. While both tools cover reviews of scientific books, their science coverage is known to be limited (less than 10% of the total). There are only a few separate index publications which are solely devoted to scientific book reviews. The following are the most commonly known:

Technical Book Review Index (TBRI), 1935–. *TBRI* is published monthly except July and August by the Special Libraries Association. This publication reprints excerpts from reviews appearing in scientific journals. About 1,200 scientific titles are covered annually. This tool is of great interest and utility to those science librarians who are working in scientific research and special libraries. However, due to the serious time lag problem described in Chen's (*2*) and several earlier studies (*51, 60*) on scientific reviewing, one can see clearly that the problem is even greater with *TBRI*.

Mental Health Book Review Index, 1956–1972. This tool indexed reviews in 302 journals to about 300 books per year in subject fields related to mental health (*61*). It is a very complete and useful source on the specialized subject, but unfortunately was suspended in 1972.

There are really very few scientific book review indexes available, and as stated in 1970 by Sadow, none of the reviewing publications available at that time combined in one publication three desired qualities—comprehensiveness of coverage, critical reviews by qualified reviewers, and promptness of publication (*62*). Almost another decade has gone by since then, and we can see that the same situation still

exists. Thus, in light of the huge number of scientific book reviews available, the problems of both bibliographic control and access to scientific review literature are obvious.

BOOK REVIEWING JOURNALS

At least the two following types of reviewing journals cover scientific book reviews:

Journals Entirely Devoted to Book Reviewing

This type of book reviewing journal, whether of general or scientific nature, has been greatly used by science librarians as a supplement to book review indexing tools, such as *TBRI*. Most of these reviewing journals have been prepared with specific reader groups in mind. Thus, they can be useful selection tools for different types of libraries and library users. The following are a few examples of journals which are devoted entirely to book reviewing:

New Technical Books (*NTB*), published monthly by the Research Libraries of the New York Public Library, provides an annotated list of current books in English in the physical sciences, mathematics, and engineering. The annotations are written by the staff members of the Science and Technology Division of the New York Public Library after examination of review copies received from the publishers. A British counterpart of *NTB* is the *Aslib Book List* (*ABL*), which is a monthly list of new books in English in all fields of science and engineering. Both *NTB*'s and *ABL*'s annotations are mostly descriptive, but often contain recommendations of reader or library suitability. Other book reviewing journals of interest to those librarians who are concerned with science book selection at various levels include the American College and Research Libraries Association's *Choice*, which is geared to the needs of college libraries and covers science as well as other subject materials; *AAAS Science Books*, which is published by the American Association for the Advancement of Science for the use of elementary and high school libraries; and *Appraisal*, which is a review of children's science books, published three times a year by the Children's Science Book Review Committee, sponsored by the Harvard Graduate School of Education and the New England Round Table of Children's Librarians (*63*).

Scientific Journals with Review Sections

Of all types of scientific book review sources, scientific periodicals are most important to both scientists and science librarians. On the whole, scientific book reviews prepared by subject specialists are more instructive, evaluative, and critical than those prepared by nonscientists.

Chen found in her comprehensive studies of biomedical, scientific, and technical

book reviewing that of the enormous number of the world's scientific journals, only a small percentage carry book reviews. For example, out of the 285 biomedical journals examined by her in 1972, of the 1970 issues, only 59 included book reviews. Her updated study further showed that 6 of these 59 journals had no review in 1973, and 12 of them contained fewer than 15 reviews in each journal title in 1973 (*64*). She further concluded that "among the biomedical, scientific, and technical reviewing periodicals, the distribution of book reviews obeys Bradford's law of scattering. In other words, a small number of journal titles account for a very large percentage of book reviews issued in various disciplines" (*65*). Thus, a very small number of primary reviewing media, in terms of quantitative coverage, have been identified by her for each general and specialized field of medicine, science, and technology. In other words, her research results make it possible to identify a core list of book reviewing tools for science librarians for effective and systematic book selection and evaluation.

It is obviously impossible to present the details of Chen's studies here, and readers are well advised to consult her book. However, for the readers' convenience, a very selective core list of scientific book reviewing media (taken from Chen's book) is provided, as follows:

General Biomedical
(the top seven, in alphabetical order)

Annals of Internal Medicine
Archives of Internal Medicine
British Medical Journal
Journal of the American Medical Association
Lancet
New England Journal of Medicine
Quarterly Review of Biology

Clinical Medical
(one per specialty)

General Medicine:	*American Family Physician*
Anesthesiology:	*Anaesthesia*
Cardiovascular System:	*American Heart Journal*
Dermatology:	*Archives of Dermatology*
Geriatrics:	*Journal of Gerontology*
Neurology and Neurosurgery:	*Archives of Neurology*
Obstetrics and Gynecology:	*Journal of Obstetrics and Gynaecology of the British Commonwealth*
Ophthalmology:	*American Journal of Ophthalmology*
Otorhinolaryngology:	*Annals of Otology, Rhinology and Laryngology*
Pathology:	*Journal of Clinical Pathology*
Pediatrics:	*American Journal of Diseases of Children*
Physical Medicine:	*Physical Therapy*
Psychiatry:	*American Journal of Psychiatry*
Public Health:	*American Journal of Public Health*
Respiratory System:	*Chest*
Surgery:	*British Journal of Surgery*

General Science
(the top five, in alphabetical order)

American Scientist
Nature
New Scientist
Science
Scientific American

Subject Scientific

Mathematics:	*American Mathematical Monthly*
	American Statistical Association Journal
Astronomy:	*Observatory*
	Sky and Telescope
Physics:	*Applied Optics*
	Contemporary Physics
	Physics Today
Chemistry:	*Chemistry and Industry*
	Chemistry in Britain
	Journal of Chemical Education
	Journal of the American Chemical Society
Earth Sciences:	*Bulletin of the American Association of Petroleum Geologists*
	Earth Science

Engineering
(one per subject)

General Engineering:	*Engineer* (London)
Aeronautical Engineering:	*Aeronautical Journal*
Chemical Engineering:	*Chemical Engineer*
Civil Engineering:	*Civil Engineering*
Electrical Engineering:	*IEEE Spectrum*
Material Science and Engineering:	*Journal of Material Science*
Mechanical Engineering:	*Mechanical Engineering*
Metallurgy:	*Journal of Metals*
Nuclear Engineering:	*Nuclear Science & Engineering*

In considering these scientific reviewing journals, several important points should be kept in mind. They are:

First, the journal titles are listed here mainly because of their quantitative review coverage, which is *not* the only criterion for judging the usefulness of a review journal. One ought to compare the review media in the same subject area with additional considerations, such as time lag of book reviews, review length, authority, etc.

Second, in most cases, more than one reviewing journal should be utilized for each subject field. Chen's book should be consulted for further reviewing titles.

Third, the reviewing journals listed above are periodicals mainly of interest to academic librarians. However, *American Scientist, Nature, Science, Scientific American*, and *Sky and Telescope* should also be of great interest to both public and school librarians. One should also keep in mind that there are scientific jour-

nals of strong school orientation. We have already mentioned the *AAAS Science Books* and *Appraisal*. Both are reviewing journals devoted entirely to science book reviews for elementary and secondary school libraries and public libraries. Chen also provides statistical analyses on several scientific journals with review sections of strong school orientation. The following are those which contained more than 50 reviews in 1973 (*66*):

American Biology Teacher
Arithmetic Teacher
The Mathematics Teacher
Physics Teacher
School Science and Mathematics
Science and Children
Science Digest
The Science Teacher

The Current Status of Scientific Reviews and Reviewing

Chen's investigations most systematically analyze the current status of scientific book reviews and reviewing. The following is a brief summary of her findings (*67*).

1. As stated earlier, among the enormous number of scientific periodicals, the distribution of book reviews obeys Bradford's law of scattering (*68*). For example, the seven general biomedical reviewing journals listed earlier accounted for 52.8% of the total number of book reviews appearing in 54 reviewing journals in 1970 (*69*).

2. On the whole, reviews for biomedical and general science books are well provided in general biomedical and general science reviewing media. Engineering books are most inadequately reviewed in specialized periodicals. Of all the specialized science books, books in astronomy are most poorly reviewed.

3. The time lag in book reviewing is generally longer in the scholarly, specialized journals than in the general ones, and the reviews tend also to be longer and more comprehensive in the former.

4. The time lag of each individual book review varies greatly. For example, the range of the 3,347 book reviews appearing in the 54 general biomedical reviewing journals in 1970 is 0–108 months (*70*); while the range of 980 of the 1,010 reviews in nine general science journals in the second half of 1971 is 0–62 months (*71*). Obviously, those book reviews with long time lags are of limited value for selection and evaluation purposes.

5. Scientific reviewing journals showed wide variations in the mean time lag for reviewing among the various journals. The overall mean time lag for these reviewing media also varied greatly from one subject to another, as shown in the following:

Subject	Overall mean time lag (months)	Range of mean time lag among journals studied (months)
General Biomedicine	10.4	5.8–42.0
General Science	12.2	5.5–25.3
Engineering	9.7	6.5–20.1

In comparing the time lag data with the data on quantitative coverage, it is fortunate to find that some of the most important reviewing journals in terms of quantitative review coverage, as listed earlier, also have relatively short time lags for reviews, as summarized in the following (*72*):

Journal title	Mean time lag (months): 1970
Annals of Internal Medicine	9.6
British Medical Journal	6.6
Journal of the American Medical Association	7.2
Lancet	5.8
New England Journal of Medicine	8.8
	Mean time lag (months): 1972
American Scientist	14.0
Nature	6.2
New Scientist	5.5
Science	7.9
Scientific American	8.5

It is obvious from these data that those major reviewing journals such as *Nature* and *Science* would be more useful to science librarians and scientists than those media such as *American Scientist*, since the latter has a mean time lag almost twice as long.

6. Scientific book reviews of the 1970s seem to have even longer time lags than did those in the 1940s, as discussed by Culver and Long (*36*).

7. The mean review length also varies greatly among journals. As stated earlier, on the whole, the reviews tend to be longer and more comprehensive in the scholarly and specialized journals. Readers are referred to Chen's book for detailed information.

8. Duplication in reviewing appears frequently among general biomedical journals and between general biomedical and specialized clinical medical journals. Similarly, it also occurs between general science journals and specialized science journals.

9. Over 75% of the scientific books reviewed are published by trade publishers, and university presses are the distant second group of suppliers. Based on the number of books reviewed, Chen identifies the leading scientific book publishers as follows:

A. Trade Publishers

	American	British
Biomedicine:	C. C. Thomas Williams & Wilkins W. B. Saunders	Churchill-Livingston Butterworth
Science:	John Wiley Academic Press	Butterworth
Engineering:	John Wiley American Elsevier	Butterworth

B. University Presses

MIT Press	Oxford University Press

10. Except in astronomy and engineering, the great majority (over 70%) of books reviewed are American imprints.

Conclusions

Although biomedical, scientific, and technical book reviewing has been systematically and intensively studied by the present author, further research is needed to explore the qualitative scientific review characteristics.

There have been a sufficient number of reports since the 1940s stressing the seriousness of the time lag problem in scientific book review, and Chen's recent studies show clearly that the situation seems to get worse progressively. In order to make book reviews in scientific journals useful sources of information for scientists and viable tools for science librarians for book selection and collection development purposes, all parties involved need to work collectively to improve the situation. This is the joint responsibility of the book publishers, reviewers, reviewing journal editors, scientific journal readers, and science librarians.

Finally, the bibliographic access to scientific book review literature is a serious problem. In 1970 alone, there were 3,347 book reviews in 54 biomedical journals studied by Chen. An indexing tool such as *TBRI* covers only about 1,200 reviews annually and has weak coverage in the biomedical fields. Furthermore, as discussed earlier, such indexes have an even greater time lag problem than the scientific reviewing journals themselves. Thus, they cannot be effective tools. Chen has shown in her studies that scientific reviews conform to the Bradford scattering distribution, thus it is theoretically possible for one to produce a timely indexing tool covering only a core of scientific reviewing journals which contain a large portion (say 80%) of the total book reviewing literature. Advanced technologies, such as a mini-computer, etc., should be explored for this possibility.

REFERENCES

1. Ilse Bry and Lois Afferbach, "Book Reviewing in the Sciences of Human Behavior as a Contribution to Scholarship by the Scientific Community," *Mental Health Book Review Index*, **6**, i (July 1961).
2. Ching-chih Chen, *Biomedical, Scientific and Technical Book Reviewing*, Scarecrow Press, Metuchen, N.J., 1976, p. 2.
3. Mary L. Allison, "Observations on Specialized Book Reviewing," *Stechert-Hafner Book News*, **19**, 93 (April 1965).
4. George Sarton, "Notes on the Reviewing of Learned Books," *Science*, **81**, 1182–1187 (April 22, 1960).
5. Sarton, Ref. *4*, p. 1182.
6. Sarton, Ref. *4*, p. 1183.
7. Arthur P. Young, "Scholarly Book Reviewing in America," *Libri*, **25**(3), 174–182 (1975).
8. Gladys Borchers, "What We Expect of a Book Review," *Quart. J. Speech*, **37**, 81–86 (February 1951).

9. Charles G. Roland, "Thoughts About Medical Writing: XI. On Reviewing Bad Books," *Anaesthesia and Analgesia*, **51**, 462–463 (May–June 1972).
10. Roland, Ref. *9*, p. 462.
11. Le Roy C. Merritt, "The Patterns of Modern Book Reviewing," in *Reviews in Library Book Selection*, Wayne State Univ. Press, Detroit, 1958, p. 4.
12. Dean C. Champion and Michael F. Morris, "A Content Analysis of Book Reviews in *AJS*, *ASR*, and *Social Forces*," *Amer. J. Sociology*, **78**, 1258 (March 1973).
13. Ching-chih Chen and Thomas J. Galvin, "Reviewing the Literature of Librarianship: A State of the Art Report," in *American Reference Book Annual*, 1976, Vol. 6, pp. xxxi–xlv.
14. Katherine Ann Gardner, "Book Reviewing in American Journals in the Physical Sciences," unpublished master's thesis, University of North Carolina, Library School, 1964, p. 10.
15. Merritt, Ref. *11*, p. 39.
16. *Physics Today*, **30**, 57–58 (June 1977).
17. *American Reference Books Annual*, "Instruction Sheet" [to reviewers].
18. Rita James Simon and Linda Mahan, "A Note on the Role of Book Review Editor as Decision Maker," *Lib. Quart.*, **39**(4), 353 (October 1969).
19. George S. Bonn, "The Aids of Selection," in *Collecting Science Literature for General Reading* (Frances B. Jenkins, ed.), Illini Union Bookstore, Champaign, Ill., 1961, pp. 90–137 (particularly pp. 99–101).
20. Mary L. Allison, Ref. *3*, p. 94.
21. Sir Solly Zuckerman, "The Reviewing of Scientific Books," *Veterinary Rec.*, **86**, 610–611 (May 23, 1970).
22. Lester S. King, "The Book Reviewing," *JAMA*, **205**, 343–344 (August 5, 1968).
23. King, Ref. *22*, p. 344.
24. Sarton, Ref. *4*, p. 1184.
25. Gardner, Ref. *14*, p. 73.
26. Allison, Ref. *3*, pp. 93–94.
27. Allison, Ref. *3*, p. 95.
28. Pierre Van den Berghe, *Academic Gamesmanship*, Abelard-Schuman, New York, 1970, pp. 100–101.
29. Arnold Sadow, "Book Reviewing Media for Technical Libraries," *Special Lib.*, **61**, 194–198 (April 1970).
30. Phyllis D. Bentley, "The Book Reviewing Adequacy of Certain Chemical Journals for College Library Book Selection," unpublished master's thesis, Columbia University, School of Library Service, 1937.
31. Robert H. Whitford, "Evaluation of Certain Technical Book Reviewing Media as Book Selection Aids in a College Technology Library," unpublished master's thesis, Columbia University, School of Library Service, 1939.
32. Marguerite V. Doggett, "The Extent to Which the Book Reviews in Certain Biological Journals Meet the Need of College Library Book Selection," unpublished master's thesis, Columbia University, School of Library Service, 1940.
33. Julia E. Wilson, "An Evaluation of Medical Book Reviews," *Bull. Medical Lib. Assoc.*, **33**, 305–314 (July 1945).
34. Margaret M. Field, "A Study of Reviewing Mediums for Technical Books," *Special Lib.*, **37**, 324–326 (December 1946).
35. Gertrude Schutze, "Time Interval Between Book Publication and Review," *Special Lib.*, **38**, 297–299 (November 1947).
36. Marguerite R. Culver and Frank R. Long, "Too Much Time Lag in Technical Book Reviews," *Lib. J.*, **74**, 805–806 (May 15, 1949).
37. Joan Nelis, "Study of Certain Book Reviewing Media for Technical Book Selection," unpublished master's paper, Western Reserve University, School of Library Science, 1949.

38. Shirley Ann Schneider, "A Study of the Reviewing of Science Books for Young People," unpublished master's paper, Western Reserve University, School of Library Science, 1957.
39. Wilma E. Zimmerman, "Technical Book Selection and Survey of Practice in Public Libraries—A Bibliographical Essay and Survey," unpublished master's paper, Western Reserve University, School of Library Science, 1957.
40. Patricia Anderson Carpenter, "The Adequacy of Selected Book Reviewing Media in the History of Medicine," unpublished master's thesis, University of North Carolina, Library School, 1964.
41. S. J. Christon, "Analysis of Selected Reviews of Science Books Published in 1968 for Junior High Students," unpublished master's thesis, Western Michigan University, 1969.
42. Laura Kunstler Graff, "Book Reviewing in the Literature of Surgery," unpublished master's thesis, University of Chicago, School of Library Science, 1974.
43. Young, Ref. *7*, pp. 175, 178.
44. Ching-chih Chen, "Biomedical Book Reviewing," *Nature*, **242**, 577–578 (April 27, 1973).
45. Ching-chih Chen and Arthuree M. Wright, "Current Status of Biomedical Book Reviewing: Part I. Key Biomedical Reviewing Journals with Quantitative Significance," *Bull. Medical Lib. Assoc.*, **62**(2), 105–112 (April 1974).
46. Ching-chih Chen, "Current Status of Biomedical Book Reviewing: Part II. Time Lag in Biomedical Book Reviewing," *Bull. Medical Lib. Assoc.*, **62**(2), 113–119 (April 1974).
47. Ching-chih Chen, "Current Status of Biomedical Book Reviewing: Part III. Duplication Patterns in Biomedical Book Reviewing," *Bull. Medical Lib. Assoc.*, **62**(3), 296–301 (July 1974).
48. Ching-chih Chen, "Current Status of Biomedical Book Reviewing: Part IV. Major American and British Biomedical Book Publishers," *Bull. Medical Lib. Assoc.*, **62**(3), 302–308 (July 1974).
49. Ching-chih Chen, "Current Status of Biomedical Book Reviewing: Part V. A List of Most Frequently Reviewed Biomedical Books in 1970," *Bull. Medical Lib. Assoc.*, **62**(3), 309–313 (July 1974).
50. R. E. Blackwelder, "Books and Scientific Meetings," *Science*, **115**, 417 (April 18, 1952).
51. Sadow, Ref. *29*, p. 195.
52. Gardner, Ref. *14*, p. 67.
53. Sarton, Ref. *4*, p. 1186.
54. King, Ref. *22*, p. 92.
55. Chen, Ref. *2*, p. 61.
56. Chen, Ref. *2*, p. 18.
57. Chen, Ref. *2*, p. 29.
58. Chen, Ref. *2*, pp. 30, 63, 95.
59. William L. Emerson, "An Approach to Book Selection in the Sciences for Public Libraries," *Lib. Assoc. Rec.*, **63**, 271 (August 1961).
60. Gardner, Ref. *14*, pp. 71–72.
61. Young, Ref. *7*, p. 181.
62. Sadow, Ref. *29*, p. 196.
63. *Publishers Weekly*, **193**, 84–85 (February 26, 1968).
64. Chen, Ref. *2*, p. 13.
65. Chen, Ref. *2*, p. 123.
66. Chen, Ref. *2*, pp. 161–162.
67. Chen, Ref. *2*, pp. 123–126.
68. S. C. Bradford, *Documentation*, Lockwood, London, 1948.
69. Chen, Ref. *2*, p. 17.
70. Chen, Ref. *2*, pp. 25–26.
71. Chen, Ref. *2*, p. 60.
72. Chen, Ref. *2*, pp. 20, 58, 141.

BIBLIOGRAPHY

Allison, Mary L., "Observations on Specialized Book Reviewing," *Stechert-Hafner Book News*, **19**, 93 (April 1965).

American Reference Books Annual, "Instruction Sheet" [to reviewers].

Bentley, Phyllis D., "The Book Reviewing Adequacy of Certain Chemical Journals for College Library Book Selection," unpublished master's thesis, Columbia University, School of Library Service, 1937.

Blackwelder, R. E., "Books and Scientific Meetings," *Science*, **115**, 417 (April 18, 1952).

Bonn, George S., "The Aids of Selection," in *Collecting Science Literature for General Reading* (Frances B. Jenkins, ed.), Illini Union Bookstore, Champaign, Ill., 1961, pp. 90–137 (particularly pp. 99–101).

Borchers, Gladys, "What We Expect of a Book Review," *Quart. J. Speech*, **37**, 81–86 (February 1951).

Bradford, S. C., *Documentation*, Lockwood, London, 1948.

Bry, Ilse, and Lois Afferbach, "Book Reviewing in the Sciences of Human Behavior as a Contribution to Scholarship by the Scientific Community," *Mental Health Book Review Index*, **6**, i (July 1961).

Carpenter, Patricia Anderson, "The Adequacy of Selected Book Reviewing Media in the History of Medicine," unpublished master's thesis, University of North Carolina, Library School, 1964.

Champion, Dean C., and Michael F. Morris, "A Content Analysis of Book Reviews in *AJS*, *ASR*, and *Social Forces*," *Amer. J. Sociology*, **78**, 1258 (March 1973).

Chen, Ching-chih, "Biomedical Book Reviewing," *Nature*, **242**, 577–578 (April 27, 1973).

Chen, Ching-chih, *Biomedical, Scientific and Technical Book Reviewing*, Scarecrow Press, Metuchen, N.J., 1976.

Chen, Ching-chih, "Current Status of Biomedical Book Reviewing: Part II. Time Lag in Biomedical Book Reviewing," *Bull. Medical Lib. Assoc.*, **62**(2), 113–119 (April 1974).

Chen, Ching-chih, "Current Status of Biomedical Book Reviewing: Part III. Duplication Patterns in Biomedical Book Reviewing," *Bull. Medical Lib. Assoc.*, **62**(3), 296–301 (July 1974).

Chen, Ching-chih, "Current Status of Biomedical Book Reviewing: Part IV. Major American and British Biomedical Book Publishers," *Bull. Medical Lib. Assoc.*, **62**(3), 302–308 (July 1974).

Chen, Ching-chih, "Current Status of Biomedical Book Reviewing: Part V. A List of Most Frequently Reviewed Biomedical Books in 1970," *Bull. Medical Lib. Assoc.*, **62**(3), 309–313 (July 1974).

Chen, Ching-chih, and Thomas J. Galvin, "Reviewing the Literature of Librarianship: A State of the Art Report," in *American Reference Book Annual*, 1976, Vol. 6, pp. xxxi–xlv.

Chen, Ching-chih, and Arthuree M. Wright, "Current Status of Biomedical Book Reviewing: Part I. Key Biomedical Reviewing Journals with Quantitative Significance," *Bull. Medical Lib. Assoc.*, **62**(2), 105–112 (April 1974).

Christon, S. J., "Analysis of Selected Reviews of Science Books Published in 1968 for Junior High Students," unpublished master's thesis, Western Michigan University, School of Library Science, 1969.

Culver, Marguerite R., and Frank R. Long, "Too Much Time Lag in Technical Book Reviews," *Lib. J.*, **74**, 805–806 (May 15, 1949).

Doggett, Marguerite V., "The Extent to Which the Book Reviews in Certain Biological Journals Meet the Need of College Library Book Selection," unpublished master's thesis, Columbia University, School of Library Service, 1940.

Emerson, William L., "An Approach to Book Selection in the Sciences for Public Libraries," *Lib. Assoc. Rec.*, **63**, 271 (August 1961).

Field, Margaret M., "A Study of Reviewing Mediums for Technical Books," *Special Lib.*, **37**, 324–326 (December 1946).

Gardner, Katherine Ann, "Book Reviewing in American Journals in the Physical Sciences," unpublished master's thesis, University of North Carolina, Library School, 1964.

Graff, Laura Kunstler, "Book Reviewing in the Literature of Surgery," unpublished master's thesis, University of Chicago, School of Library Science, 1974.

King, Lester S., "The Book Reviewing," *JAMA*, **205**, 343–344 (August 5, 1968).

Merritt, Le Roy C., "The Patterns of Modern Book Reviewing," in *Reviews in Library Book Selection*, Wayne State Univ. Press, Detroit, 1958.

Nelis, Joan, "Study of Certain Book Reviewing Media for Technical Book Selection," unpublished master's thesis, Western Reserve University, School of Library Science, 1949.

Physics Today, **30**, 57–58 (June 1977).

Publishers Weekly, **193**, 84–85 (February 26, 1969).

Roland, Charles G., "Thoughts About Medical Writing: XI. On Reviewing Bad Books," *Anaesthesia & Analgesia*, **51**, 462–463 (May–June 1972).

Sadow, Arnold, "Book Reviewing Media for Technical Libraries," *Special Lib.*, **61**, 194–198 (April 1970).

Sarton, George, "Notes on the Reviewing of Learned Books," *Science*, **81**, 1182–1187 (April 22, 1960).

Schneider, Shirley Ann, "A Study of the Reviewing of Science Books for Young People," unpublished master's paper, Western Reserve University, School of Library Science, 1957.

Schutze, Gertrude, "Time Interval Between Book Publication and Review," *Special Lib.*, **38**, 297–299 (November 1947).

Simon, Rita James, and Linda Mahan, "A Note on the Role of Book Review Editor as Decision Maker," *Lib. Quart.*, **39**(4), 353–356 (October 1969).

Smith, Maurice H., "Commentary on Book Reviewing Media," *Special Lib.*, **61**, 515–516 (November 1970).

Van den Berghe, Pierre, *Academic Gamesmanship*, Abelard-Schuman, New York, 1970.

Whitford, Robert H., "Evaluation of Certain Technical Book Reviewing Media as Book Selection Aids in a College Technology Library," unpublished master's thesis, Columbia University, School of Library Service, 1939.

Wilson, Julia E., "An Evaluation of Medical Book Reviews," *Bull. Medical Lib. Assoc.*, **33**, 305–314 (July 1945).

Young, Arthur P., "Scholarly Book Reviewing in America," *Libri*, **25**(3), 174–182 (1975).

Zimmerman, Wilma E., "Technical Book Selection and Survey of Practice in Public Libraries—A Bibliographical Essay and Survey," unpublished master's paper, Western Reserve University, School of Library Science, 1957.

Zuckerman, Sir Solly, "The Reviewing of Scientific Books," *Veterinary Rec.*, **86**, 610–611 (May 23, 1970).

CHING-CHIH CHEN

CHILDREN'S BOOK REVIEWS AND REVIEWING

In recent years, children's trade book publishing in the United States has amounted to over 2,500 titles annually. Libraries constitute well over 80% of the market for these publications. Most public and school libraries, except large systems, determine which children's books will be acquired from book reviews. Few American libraries have systematic access to examination collections or to trade book exhibitions or to booksellers' displays offering a broad spectrum of current children's titles. Fewer still have their own reviewing groups. While all library educators and practicing librarians agree that there is no substitute for actually handling and reading a children's book as a basis for selection, in fact this desiderata seldom exists. A library purchase generally results from what reviewers say about a book, despite the limitations of this mode of acquisition.

Children do not read children's book reviews; children do not select and buy children's books for themselves or for libraries. Instead, there is—operating between publishers and children—an adult selection body comprised of parents, educators, and children's librarians. It is to these adults, and especially to the children's librarian, that the reviewer speaks.

In deciding what to buy, the children's librarian shapes United States trade book publishing for children both economically and in terms of content. The influence goes far beyond the initial reading of a review and the purchase of a title, to intricate winnowing processes which lead to awards and selective lists which, in turn, determine the configuration of American children's literature. The process starts with what the reviewers say about a book at the time of its publication and how the children's librarians respond to what is said.

In the United States, children's librarians are the guardians of children's literature. This self-assumed role was taken on early in this century by the several strong leaders who created children's services in public libraries, among them Caroline M. Hewins, Alice Jordan, and Anne Carroll Moore. They were aided by such equally strong women as Louise Seaman Bechtel of Macmillan Company and May Massee of Viking Press, women who organized and managed the children's departments in several of the major publishing houses. Bertha Mahoney Miller entered this arena as a bookseller and later as founder and editor of *Horn Book Magazine*, whose course she guided for over 40 years. Alice Jordan, Anne Carroll Moore, and others reviewed for *Horn Book*, and publishers were in continuous exchange with Mrs. Miller over matters relating to the publishing and dissemination of information about children's books. This single-minded group of women in libraries, publishing, and reviewing determined not only what should be published, what should be bought, what should be read, what should be saved—but also what should be taught, who should be trained, and who should be advanced. They reared children's librarians, children's book publishers, and children's book reviewers with a firm and unyielding hand. They saw a need, and they filled it, giving structure to 20th-century American children's literature: philosophical, educational, critical. Publishing and reviewing followed accordingly.

These leaders were a tireless, dedicated body whose personal lives were as singular as their professional lives. All were unusually well educated for women of their time; all were very much at home in the literary world; most of them emerged from the urban Northeast; most of them were unmarried, at least during the formative years of their careers; none of them were mothers and thereby subject to the 24-hour home demands of children. They had but one objective: the pursuit of good literature for children. Crusaders all, they advanced under the banner of Walter de la Mare's often repeated words: "I know well that only the rarest kind of best in anything can be good enough for the young" (*1*).

Then and now, these altruistic, independent women profoundly influenced children's book reviewing. Someday scholars will illuminate this dramatic period in children's book publishing, but even in the absence of historical research, one can see how their impact and the resultant adherence to a given set of principles and standards encouraged a publishing environment which very largely was the voice of established, educated America. Cultural diversity found its way into this scene by way of the artists and authors who emigrated from Europe before and after the two world wars, but there was little representation of the cultural minorities developing in this country. Today, American publishing and reviewing, like all of American society, are becoming responsive to the pluralities in our national life. Long accepted standards and patterns are undergoing thoughtful examination; children's book publishing, marketing, and reviewing all appear to be on the edge of change.

Richard Darling's definitive study *The Rise of Children's Book Reviewing in America, 1865–1881* (*2*) informs us that, in the period immediately following the Civil War, children's book reviewing was vastly different from what it is today. Children's books were extensively reviewed not only by "every periodical of importance," but also by eminent critics of the period. Darling's thesis shows that the children's literature published between 1865 and 1881 was an important part of all literature. A major concern now is how to replicate that situation, how to once again make children's literature a part of all literature, how to encourage its review in general publications and the popular media where it can become a matter of interest to the broad reading community.

Coupled with the need to have children's literature recognized by the public as part of all literature is a deep anxiety about the future of services for children in both public and school libraries. Governmental support for these services is decreasing; the child population is decreasing; the cost of books is rising; child socialization patterns and practices are changing. Children's library services and the publishing and review of children's books—for over half a century somewhat a world unto themselves—no longer are isolated from societal pressures: economic, technological, and sociological. Children's book reviewing is responding slowly to the social ferment. The pace will be quickened by the extent to which children's book publishing finds its marketplace outside of the libraries.

Well suited to another time and another social environment, the intricately meshed interdependencies of children's library services, children's publishing, and chil-

dren's book reviewing may have served their time. Can trade book publishing remain dependent on the library market? Can reviewers continue to address principally an audience of children's literature specialists? Should publishers of children's books, children's librarians, reviewers, and promotion personnel all come from the same training fields? Does this uniformity of training result in adequate responsiveness to cultural pluralities and in the ability to work creatively with economics, communication theory, and social history as well as literature? Would the future of children's literature be better served by broader support from many areas of inquiry and opinion? Many critics now say that children's books and children's book reviewing belong once again in the public marketplace, that the approach to children's book reviewing shown by Darling to have occurred a century ago may be better suited to today's life than the reviewing patterns of the last 50 years.

Reviewers do evaluate children's books for other than librarians, of course, but this reviewing is limited and tends to be directed chiefly toward booksellers, educators, or parents. The publications carrying these reviews are read by librarians to the extent that they have major selection responsibility or to the extent that the journals reflect the interests of the librarians' user groups.

In recent years, trade books often have been used in lieu of textbooks, and some of the educational journals have offered help to their respective professional groups through book review pages intended to bring useful, curriculum-related titles to the attention of book selectors engaged in teaching. Such reviewing tends to be uneven, minimal, and noncritical. A more useful channeling of evaluative effort is the current practice of publication by teachers' organizations of an annual selective list of outstanding books, in cooperation with the Children's Book Council, a trade organization of children's book publishers.

Bookselling is another sector of the nonlibrary market which is of special interest to the children's librarian. Most children's bookselling revolves around holidays and family celebrations, with parents and friends tending to rely on booksellers' displays and counsel. In turn, booksellers—where they refer to reviews—rely mostly on those in *Publishers Weekly*, *Kirkus Review*, the *New York Times*, and other major newspapers. These are sources of weekly, early reviews. The ten or more weekly review notes in *Publishers Weekly* are written with bookstores in mind. They are short, enthusiastic, descriptive. *Kirkus*'s reviews are longer, more numerous, critical as well as descriptive, written for the literati. Despite the fairly comprehensive coverage of these two services, children's librarians pay little heed to their early reports. More likely to be considered are the weekly reviews in the book section of the *New York Times*, where children's books are reviewed in the same manner as adult books, with authors reviewing other authors and literary specialists writing fairly full, critical reviews on literary works. The *Times*'s spring and fall children's book supplements give brief comments on many of the books of a publishing season, arranging them in categories and providing comments on trends in publishing. *The Christian Science Monitor* offers special fall and spring children's book review sections. The approach is similar to that of the *Times*, but the coverage is much less ambitious.

Before considering the review journals used extensively by children's librarians, it is in order to remark briefly upon the promotional structure of children's book publishing. It is through the mechanics of this structure that reviewers are reached and systematic reviewing is encouraged, even assured. Publishers actively engaged in publishing for children are likely to be members of the previously mentioned Children's Book Council. The council's membership numbers from approximately 60 to 80 publishers at any one time; and the council works closely with the American Library Association, with educators' professional groups like the National Council of Teachers of English, and with children's book reviewers whatever their affiliation. It publishes promotional materials for children's books generally and conducts programs for its members. The council's services are particularly valuable for the library promotion staff of publishing houses.

Most children's book publishers appoint a library promotion director to see that review books are broadly distributed and that children's books are reviewed in the journals read by children's librarians. The general state of children's book reviewing depends appreciably on the effectiveness of these library promotion directors in reaching and cultivating the reviewers and the opinion makers and in seeing that they read the books published by their houses. Reviewers seldom need to request books; they are well supplied. Indeed, the economics of reviewing are based on the free review copy.

Small publishing houses which do not employ library promotion personnel, which do not have the benefits of council membership, and which are unfamiliar with the review structure for children's books are unlikely to submit their books for review, and consequently they go unreviewed. Also virtually unreviewed are the books of mass market publishers, of religious publishers, and of doctrinaire publishers. The first are considered too ephemeral, the latter too causist.

Children's librarians generally read and choose from reviews appearing in the "big four" children's book review journals: *Booklist* (American Library Association), *Bulletin of the Center for Children's Books* (University of Chicago Press), *Horn Book Magazine* (Horn Book, Inc.), and *School Library Journal* (R. R. Bowker Company). The "big four" all consider librarians their principal audience. All apply essentially the same standards and criteria to the evaluation and criticism of children's books, even though they serve somewhat different purposes and have individual emphases. The evaluative principles which guide these library-oriented reviewers are those set down in *Children and Books* by Arbuthnot and Sutherland (*3*), and by Elizabeth Nesbitt in her essay "The Critic and Children's Literature" (*4*). Essentially, the reviewer is considering how the author has said what he/she has said and how that statement compares with others or contributes to understanding. Since these are reviews for children's books, the reviewer also relates the work to the developmental stages of intended readers and looks especially at readability and appeal. All of the "big four" are well indexed.

Bulletin of the Center for Children's Books is published monthly except August and is the only one of the four which carries no advertising. About 70 critical, objective reviews appear in each number. Reviews are given both for recommended

and not-recommended books. This enables comparison. The editor writes all of the reviews but is advised by a six-member committee which meets weekly to discuss books under consideration. Not everything is reviewed; the editor chooses what she thinks will be of interest to the subscribers. Frequently this means bringing in works of new publishers, showing changes in publishing, and focusing on subjects not generally dealt with in other journals. *Bulletin* reviews are particularly strong in their attention to the child as a reader.

Booklist, the official review organ of the American Library Association, serves the selection needs of small public and school libraries in an objective and balanced way. Its reviews are within the context of the association's principles of intellectual freedom, and therefore they do not "warn people away from books." *Booklist* is published biweekly and reviews—in the "Children's Books" section—about 1,250 of the approximately 2,500 children's books received annually. A full-time staff of three book reviewers, all having library backgrounds, endeavors to meet special needs beyond the current reviewing with the inclusion of special children's book lists on a selected topic or in a foreign language. Governing policies have been a major concern since 1975 and the *Booklist* editorial staff has spent much time in relating its review program to membership needs and association policies. *Booklist* necessarily adopts a "middle-of-the-road" position between critic and librarian.

In 1924 Bertha Mahoney Miller founded *Horn Book Magazine* for the criticism and appreciation of children's books; her philosophy prevails today in the magazine's editorial and review policies. *Horn Book* reviews less than 25% of the American output of children's book publishing. The regular, locally situated, reviewers are chosen for their critical acumen. All reviewers review all types of books, with some exceptions such as science books. They meet together bimonthly prior to the publication of each one of the six annual issues. For the most part, *Horn Book* reviews only those books which it can recommend. Recommendations are subject to the qualifications expressed in review notes. Reviews are edited without alteration in content, and age or grade level is minimized. Emphasis is on the literary qualities of books reviewed; the approach is critical.

The broadest review program of the "big four" is that of the *School Library Journal*. Published monthly from September through May, it receives almost all books published and endeavors to review everything received. A full-time staff of four editors and 350 voluntary, librarian, reviewers has reviewed over 2,500 titles annually in recent publishing years. The editorial staff compares its critical view of each title with that of the volunteer reviewer; sometimes differences must be resolved. Reviews are signed. Despite their brevity and some grammatical editing, they retain a personal tone. Evaluations are made with the specific needs of school librarians uppermost in consideration. *School Library Journal* reviews paperback titles and is generally sensitive to current issues, trends, and movements. Its review policies are stated in the first issue of each volume.

Currently, the editors of these four children's book review journals constitute a strong and well-balanced group: Betsy Hearne for *Booklist*, Zena Sutherland for *Bulletin of the Center for Children's Books*, Ethel Heins for *Horn Book Magazine*,

and Lillian Gerhardt for *School Library Journal*. Each, in her own way and through productive exchange with the others, is making a unique contribution to today's reviewing and criticism of children's books. Like the leaders of the early part of this century they are determined, dedicated, conscientious critics, but they are carrying out their respective missions in terms of the current social setting and the publishing philosophies of their organizations or houses. Unquestionably their names will become associated with those of other reviewing luminaries, such as May Hill Arbuthnot, Elizabeth Nesbitt, and Ruth Hill Viguers.

Criticism of nonfiction for children is markedly absent. Whereas subject specialists often review adult nonfiction, this rarely happens for children's nonfiction. Milton Meltzer, a major nonfiction author for children, has commented so movingly upon the paucity of nonfiction reviewing that there are efforts underway to remedy the lack (*5*). Good reviewing begets good books, and the need for more good writing of nonfiction is apparent to all who work with children.

One exception to the lack of quality nonfiction reviewing of children's books is *Appraisal: Children's Science Books*, which is an outgrowth of the children's Science Book Review Committee. This thrice-yearly journal publishes two evaluations of each title reviewed: one by a science specialist and one by a children's librarian. This unusual review plan has the advantage of presenting two points of view simultaneously and of giving the reader more information about a book than generally is available. The weakness is that the reviews are very late and the coverage is limited. Each issue reviews about 50 titles. The effort is entirely voluntary and involves about 15–20 reviewers in each group. Over its decade of publishing, *Appraisal* has amassed a significant body of critical commentary on one small area of publishing for children—science books.

The American Association for the Advancement of Science's journal, *Science Books*, also evaluates children's books. These are grouped categorically with adult books on the same subject and are accorded the same careful attention of a subject specialist reviewer. Here again, the disadvantage is that the coverage is limited, and the reviews appear late.

No statistics reveal what percentage of current publishing for children is in the picture book format, but it is high and going higher. This relatively expensive format makes extensive use of outstanding artists and sophisticated bookmaking techniques. Yet there is no review journal with editorial staff or reviewers trained especially to make judgments in terms of art content. With the visual aspects of children's books—and indeed of all books—assuming more and more importance, surely the graphic critic will become an addition to any reviewing body. The development of film libraries and photographic collections, along with more attention to posters and other visual images, may hasten the day when graphic aspects of children's books will receive the kind of careful criticism now spent on literary aspects.

Historically, reviewers have evaluated children's books according to the literary and cultural criteria of Western society. In the last decade, however, minority

groups and minority group advocates have spoken vigorously in support of authors and artists and patterns and values associated with minority group cultures. There also has been a strong advocacy voice for a more assertive role for women in children's books. The Council on Interracial Books for Children is the chief organ of groups stressing elimination of racism and sexism in children's literature. Council staff and guest reviewers write lengthy reviews of current books purporting to impart a cultural image, and the council's criteria are stated forcefully in *Human (and antihuman) Values in Children's Books: New Guidelines for Parents, Educators and Librarians* (6). These can be applied through the use of a checklist.

The causist stand of the Council on Interracial Books for Children has gained a broader audience with the growing awareness of minority group concerns. The council's *Bulletin* takes an extreme position which was at first generally ignored, but it is now widely read. Its reviews represent another way of looking at values and images projected through children's books. Each number of the *Bulletin* focuses on a particular minority group or issue and the publications related to the theme of the number. Future historians may find that the council's *Bulletin* offers one of the more interesting commentaries on the state of child-rearing concerns in the 1970s.

Access to cumulative children's book reviewing is gained through *Book Review Index* and its companion publication, *Children's Book Review Index*; or through *Book Review Digest*, which includes children's books reviewed in the journals indexed and cited by *BRD*.

The reviewing of children's materials other than books has scarcely begun. *Booklist* now devotes major attention to review of nonprint productions, including those for children. Its reviews are thorough and useful, adhering to the "middle-of-the-road" policy applied to its book reviews. The one other journal making a systematic approach to review of children's nonprint materials is *Previews*. Also a Bowker publication, *Previews* follows the editorial policies and patterns of *Library Journal* and *School Library Journal*, with its principal intent the provision of review information for educational institutions. Aside from *Booklist* and *Previews*, the review of children's nonprint materials is scattered, meager, and without structure. *Film Reviews* provides the most extensive coverage; its emphasis is on the 16-mm film and on filmstrips. As long as the production industry is diverse and uncoordinated, and until there is a semblance of bibliographic control, it is likely that reviews and reviewing of nonprint materials will remain in an undeveloped state.

A small but growing interest in international children's publishing has been stimulated by the Bologna and Frankfurt book fairs, by the universality of the picture book format, and by the economics of joint publishing. *Bookbird*, the English-language journal of the International Board of Books for Youth, cites outstanding children's books published in countries which have major publishing programs and children's literature specialists, and several foreign-language review journals serve the selection needs of librarians developing foreign-language collections. The Information Center on Children's Cultures keeps an up-to-date listing of these jour-

nals. Canada's principal journals for the review of Canadian-published books and materials are *Canadian Materials* and *In Review*. England has its *Junior Bookshelf* and *Growing Point*.

Current children's book reviewing is rooted in the children's book world events and leadership of the early 20th century. It is likely that by the early years of the next century, the review of children's materials will be:

Directed toward many sectors of American society

Responsive to the concerns of many groups, cultural or special interest

International in scope

Bibliographically manageable

Related to developmental stages and human growth

In the 21st century, a great deal more will be known about the child and childhood, and much more about the child and the communication environment. The most important question may be whether, at any point, children will become their own selectors. If this were to happen, how would it change the character of children's book publishing and children's book reviewing?

REFERENCES

1. Walter de la Mare, *Bells and Grass*, Viking Press, New York, 1942, p. 9.
2. Richard Darling, *The Rise of Children's Book Reviewing in America, 1865–1881*, Bowker, New York, 1968.
3. May Hill Arbuthnot and Zena Sutherland, *Children and Books*, Scott, Foresman & Co., Glenview, Ill., 4th ed., 1972.
4. Elizabeth Nesbitt, "The Critic and Children's Literature," in *A Critical Approach to Children's Literature* (Sara Innis Fenwick, ed.), Univ. of Chicago Press, Chicago, 1967, pp. 119–126.
5. Milton Meltzer, "Where Do All the Prizes Go? The Case for Nonfiction," *Horn Book Magazine*, 52(1), 17–23 (February 1976).
6. Council on Interracial Books for Children, *Human (and anti-human) Values in Children's Books: New Guidelines for Parents, Educators, and Librarians*, Racism and Sexism Resource Center for Educators, New York, 1976.

PRISCILLA MOULTON

THE RHODE ISLAND HISTORICAL SOCIETY

At its founding in 1822 the Rhode Island Historical Society became the fifth such institution in the United States. As with its four predecessors, impetus for establishment came from a group of historically minded men who recognized a need to form permanent organizations to collect and preserve historical materials. The 12 founders were a distinguished group—among them were two governors; one United

States senator; two chief justices of the State Supreme Court; plus a chancellor, fellow, and four trustees of Brown University.

In its early days the society consisted of two distinct physical parts—a northern cabinet (headquarters) in Providence and a southern cabinet in Newport. The northern cabinet was located in the senate chamber of the old Rhode Island State House while the southern cabinet was housed in the Redwood Library. In 1878 the Rhode Island Historical Society gave the collections in its southern cabinet to the newly formed Newport Historical Society.

The northern cabinet meanwhile had moved in 1834 to a store owned by the Brown and Ives Company on Providence's South Main Street. The cabinet moved again in 1836 to the Arcade Building in downtown Providence. In 1844 the society moved into a newly built structure on Waterman Street on the Brown University campus. This structure was the first building in the country especially constructed for a historical society. Almost as soon as the cabinet was occupied, expanding collections filled existing space. Despite an addition in 1892, space remained a problem.

The society had occupied the Waterman Street cabinet for nearly a century when—through the generosity of John Nicholas Brown, Brown family scion—it acquired (in 1942) the historic John Brown house on Power Street, which provided much needed larger quarters. Now a National Historic Landmark, the John Brown house (1786; considered one of the finest federal houses in New England) is furnished with examples of Rhode Island cabinetmaking, painting, silver, and pewter. Ceramics are also displayed, including Chinese export ware, English and French porcelain, and American pottery.

By 1963 the library division of the historical society had outgrown its facilities in the John Brown house. The society purchased, for the library, an 1874 church building on Hope Street, which had been used as a branch of the Providence Public Library. With collections again growing to fill available space, the society recently acquired adjacent property for a new library wing.

The society made one more major acquisition in 1974, when the heirs of Winthrop W. Aldrich, diplomat and banker, donated to it an 1822 house purchased in 1902 by Winthrop's father, U.S. Senator Nelson W. Aldrich. The society is using Aldrich house as a museum facility for changing exhibits on various aspects of Rhode Island's history.

While acquisition of the John Brown and Aldrich houses has provided the society with space to exhibit its large collections of museum objects, collection and maintenance of library materials remains a primary function. The 1822 charter established the historical society for "deposit and safe-keeping of all the ancient documents and records illustrating the history and antiquities of the state." An early reported acquisition was "a box containing a great quantity of papers promiscuously mixed and many partly destroyed by mice." To that box of papers the historical society library has added over 1,000 manuscript collections and 150,000 books comprising the largest collection of Rhode Island historical and genealogical materials anywhere. The library collections also include newspapers, photographs, maps,

broadsides, posters, architectural drawings, and film. In 1970 the society established a film archive, one of the first in the country, to collect feature films made in Rhode Island, newsreel footage about Rhode Island, and television news film.

The varied historical materials touch upon almost every aspect of the state's history. Among the published works is a very fine collection of pre-1800 Rhode Island imprints—probably the most complete collection anywhere. There is an extensive collection of works by Rhode Island authors and many printed records of Rhode Island social and charitable organizations. Printed records also include reports of both city and state departments and agencies.

In 1874 the state appointed the historical society official repository of Rhode Island newspapers. Newspaper acquisitions began, however, with the society's founding in 1822. Indeed, one of the most important early gifts was the first 50 volumes of the *Providence Gazette*, the first newspaper published in Providence. The *Gazette* issues, running from 1762 until 1825, represent the most complete file of a colonial newspaper in existence. The newspaper collection contains, in original or microform, almost every newspaper known to have been published in Rhode Island, from the first in 1732 to the present.

The society's manuscript collection, containing manuscripts from the 17th century to the present, is particularly strong in 18th- and 19th-century business records and those of 19th- and early 20th-century businesses and social organizations. Among these collections are records of 18th-century merchants who conducted global trading activities, including some of the first American contacts with China; principal early 19th-century records of the cotton textile industry; and minutes of the third oldest women's charitable organization in the country.

Since there has never been a strong official state archival program or central agency for city and town records, the society cares for many important municipal and state records. Among these are early Providence town records, which include Roger Williams documents. Along with business, social, church, municipal, and state records, the manuscript division houses the largest existing collection of personal records of Rhode Islanders from Roger Williams to the present. The personal records are those of prominent persons and ordinary Rhode Islanders as well.

The society's early librarians were volunteers. Amos Perry, first salaried librarian, in 1880 attempted a systematic organization of the library collections. Clarence S. Brigham, who followed Perry, emphasized defined collecting policies. Previously the society merely had accepted what came to it by gift. Although the society's librarians were often distinguished scholars, not until 1971 did a professionally trained librarian assume responsibility for the collections. Nancy E. Peace, librarian until August 1976, was also the first woman to hold the position. Peace began conversion of antiquated cataloging schemes to the Library of Congress classification system.

In addition to its initial objectives to collect and preserve Rhode Island historical materials, the society's constitution charged it to "publish and diffuse information" about Rhode Island and to "encourage and promote the study of history by lec-

tures and other means." In accordance with its constitutional objectives, the society in 1827 published the first American edition of Roger Williams's *Key into the Language of America* (Volume 1 of *The Rhode Island Historical Society Collections*). Nine more monographs were published in the *Collections* series through 1902.

The first regular periodical publication which included historical material was *Proceedings of the Rhode Island Historical Society*, begun in 1871. In 1893 the society began *Publications of the Rhode Island Historical Society*. The first number of each year consisted of the *Proceedings*—containing society business—while subsequent numbers included historical articles as well as previously unpublished tax lists and genealogical records.

Publications ceased in 1899 with Volume 8. The following year an annual publication resumed under a previous title—*Proceedings of the Rhode Island Historical Society*. The new *Proceedings*, however, did not include historical articles or primary source material.

In 1918 the society resumed publication of a quarterly journal with scholarly articles, bibliographies, genealogical material, and primary sources. This new publication, *Collections of the Rhode Island Historical Society*, also contained book reviews and brief news notes of acquisitions and activities. Numbering of the *Collections* began with Volume 11, Number 1, continuing the numbering of the original monographic series.

Twenty volumes of the periodical *Collections* were published through 1941. In 1942 the current quarterly publication, *Rhode Island History*, appeared with Volume 1, Number 1. *Rhode Island History* is the primary outlet for scholarly material on the state's history. It contains articles which present interpretations of an aspect of Rhode Island history or of individuals and groups closely associated with the state. Except for other short-lived publications, since 1893 the various periodicals of the Rhode Island Historical Society have been the only statewide journals devoted solely to Rhode Island history.

In addition to *Rhode Island History*, the society continues to publish monographs and primary sources. Along with its own publications, historical society resources have formed a basis for numerous other books and articles. With funding from the National Historical Publications and Records Commission, the society is sponsoring *The Papers of General Nathanael Greene*. Volume 1 of a projected five-volume set appeared in 1976.

Although the library and museum materials are primarily research collections, the society attempts to interest a wide range of people in Rhode Island history. Under the current director, Albert T. Klyberg, the society has developed programs ranging from popular to scholarly. Along with a regular lecture series which began in 1835, there are classes in genealogy, local history, and furniture; special seminars; and an annual month-long forum focusing on a particular period in Rhode Island history.

Like most of its eastern counterparts, the Rhode Island Historical Society is a private organization. In its early days, members were proposed and then voted on

by a membership committee. By 1900, membership, for all practical purposes, was open to anyone who could pay yearly dues. There are currently about 3,000 members.

The society relies for funds upon membership dues, endowment income, contributions, and periodic fund drives. Since 1874 the State of Rhode Island has appropriated sums for acquisitions of newspapers, for care of certain state records, and more recently for the film archive and for publication of *Rhode Island History*.

Although the society has always opened its collections to the public, in recent years use of the library by nonmembers has grown dramatically. This growth, in part, stems from conscious efforts by the society to interest all types of Rhode Islanders in its programs and to make them aware of the society's vast resources. Not an official state agency, the Rhode Island Historical Society is, in function, *the* state historical society. For over 155 years it has been the preeminent source for historical information about the state. The new museum facility and planned library expansion should make it even more capable of fulfilling its role as collector, preserver, and interpreter of Rhode Island history.

BIBLIOGRAPHY

Brennan, Paula Marie, "A History of the Rhode Island Historical Society of Providence, R.I.," unpublished dissertation, Catholic University, 1959.

Collins, Clarkson A., III, "The Rhode Island Historical Society," unpublished manuscript, RIHS, 1952.

Rhode Island Historical Society Collections, 1918–1941.

Rhode Island Historical Society Proceedings, 1871–1917.

NANCY F. CHUDACOFF

THE RHODE ISLAND LIBRARY ASSOCIATION: A HISTORY

The "Ancient World"

By 1890 the American Library Association (ALA) found that many librarians were unable to reach the national library conferences, and that the concerns of those same librarians were reduced to insignificance in librarians' sections of state education associations. Consequently, ALA recommended the formation of state library associations to keep librarians informed of current issues and to deal with local problems. Among the librarians in 34 states that followed the ALA recommendation in the next 20 years were those of the Union's smallest state, Rhode Island.

In response to a call by an enthusiastic Frank G. Bates, state librarian of Rhode

Island, 50 people assembled in the lecture room of the Providence Public Library on March 9, 1903, to discuss the desirability of a state library association. They promptly and unanimously voted to establish one with the constitutional objective of promoting "the Library interest of the state of Rhode Island." On the same day a constitution was drafted; officers were elected, with William Foster of the Providence Public Library as first president; dues were fixed at 25 cents per member; and a schedule of two annual meetings was set.

In the first decade of the Rhode Island Library Association's (RILA) existence, its presidents (Foster and succeeding Presidents Harry Koopman of Brown University, Ethan Wilcox of Westerly Public Library, Richard Bliss of Newport's Redwood Library, Herbert Brigham of the State Library, Frank Bates, and Harold Dougherty of the Pawtucket Public Library) conducted the semiannual meetings. The papers presented focused educationally on book coverings, service to schools, interlibrary loan, publicity, local history, government documents, professionalism, service to non-English speaking readers, catalog cards, and methods of reaching out to the community. After formation of RILA's first committee, a nominating committee, attention turned toward establishing a publications committee and issuing an association newsletter. So, in cooperation with the Rhode Island Board of Education (then in charge of public libraries and state aid), RILA issued its first quarterly *Bulletin* in May 1908. The *Bulletin* soon floundered, however, and was discontinued in November 1912. Despite repeated attempts at resuscitation, no newsletter was to appear for the next 15 years.

Yet other early ventures fared far better. With the apostolic zeal of early churchmen, RILA officers increased membership from 93 persons at the end of 1903 to 175 by 1912; wrote and passed a new constitution, also in 1912; and commenced a second decade for the association with a members' handbook.

The second decade also brought the first RILA efforts at securing state financial aid and legislation. State aid to public libraries had originated in small amounts in 1875. RILA requested funds for maintenance of the association, a state pension plan for librarians, a law allowing libraries to serve beyond their legal community boundaries, and a state supplement to the salaries of high school librarians. All requests were rejected.

By 1916 RILA members were responding to the World War. For the next several years Presidents Joseph Peacock and Bertha Lyman encouraged bibliographies on the war, members' awareness of war topics, the collection of 33,000 books for troop camps, and the singing of patriotic war songs and hymns. In the 1918 RILA annual report it was noted that librarians did not need any "encouragement" to exclude pro-German books from their collections.

War put another kind of pressure on librarians beyond that of patriotic fervor when the public began to demand quickly changing information on subjects from ration-oriented recipes to shifting battle fronts. Consequently, attendance at a 1917 library summer school at the Rhode Island Normal School (later Rhode Island College) was considerable. And, in 1918 RILA asked the State Board of Education to provide regular library instruction at the Normal School. This was

granted; it constituted RILA's first successful request for state action, as well as the beginning of Rhode Island formal education for librarianship.

The war and the period following brought great prosperity to Rhode Island textile and other light industry. Yet, while Rhode Island was spending more for library books than most states, its libraries were still beset with serious problems. A RILA request to the State Board of Education in 1919 to upgrade school library service went unheeded. So did RILA legislation presented to the state in 1921 proposing certification of librarians, increased librarians' salaries, and increased book budgets. The General Assembly of Rhode Island argued that certification of librarians could lead to unionization, and that the proposed increase in book budgets would favor large libraries over the small ones. RILA interest in certification was to continue unabated through the 1940s, frequently paralleling that of ALA. Equal distribution of funds between small and large libraries continued as an issue through enactment of the Library Services Act in 1956, and on to proposed revision of the Library Services and Construction Act in 1977. In 1921 the State of Rhode Island did agree to small grants to libraries with personnel budgets under $500 per annum. Failing to win larger book budgets, RILA President William Goddard sought to provide more books for the public by exhorting large libraries to assist smaller ones with cooperative loans of books.

To stimulate professional development, RILA recommended to the trustees of the 63 public libraries then in existence that they pay conference expenses for their staffs. In this period the library conference was often the single method of education for library staffs, and great effort was expended in organizing and holding numerous joint conferences between RILA and nearby library associations in other states. These joint conferences of two or more New England states actually and directly prefigured the evolution of the New England Library Association by 1940.

Finally, in 1921 RILA proposed its first code of library standards to the State Board of Education, recommending that librarians work a minimum of 10 hours a week, that libraries be open a minimum of 6 hours a week, that library materials be cataloged, and that every librarian have a minimum of 2 weeks' education in a library institute.

In the 1920s—under Presidents George Hinckley, Francis Drury, Clarence Sherman, Adele Martin, and Sara Sherman—RILA committees or spokespeople urged library trustees to work more diligently to raise library budgets and to leave administration to library directors. RILA also repeated a request that the state supplement salaries of high school librarians, recommended that librarians be allowed paid time for professional reading, fought again for certification of librarians based on their accomplishments, investigated service to Blacks, explored the idea of radio book review talks and story hours, asked for more books in the existing traveling libraries in foreign languages and "easy English" for the foreign-born, asked for a state library field adviser or consultant, issued two more association handbooks, and discovered the censorship issue in the interdiction of certain foreign titles by the United States Customs Service.

The RILA *Bulletin* appeared again in 1927 after nearly a decade of active attempts to revive it. In 1927 it was finally decided to issue it independently under RILA sponsorship, and not through the Board of Education, which had published the old series. The new series begun in 1927 has resulted in a volume per year ever since, although the number of issues per volume varied widely from one to three issues per volume into the 1960s. In the later '60s the *Bulletin* began to appear quarterly, and at present 11 issues per volume (per year) are published.

In its first quarter of a century, with great zeal on the part of its members, the Rhode Island Library Association had addressed standards for libraries, had secured the rudiments of education for librarians, had recognized the need for service to a variety of clienteles, had established regular dissemination of information to its members in a newsletter and semiannual conferences, and had comprehended the relationship between money and quality library service. But, on the two major issues requiring considerable funding—library development and cooperation for better public access, and salaries and related employment benefits for library staffs—a beginning had yet to be made. The next 25 years of economic depression, war, and postwar fear and hysteria were to amount to a "middle ages" for Rhode Island libraries, and for many other libraries in the country. The association's second quarter of a century was a period in which Rhode Island librarians pulled back into a monastic life in their libraries; it was a period in which they did their jobs, in which they failed to believe that they could do anything to do those jobs better; a period in which they failed to address, or ineffectively addressed, the larger issues.

The "Middle Ages"

When Henry Van Hoesen assumed the RILA presidency in 1931 the Great Depression was in full swing, and Rhode Island librarians were hurrying back to their libraries to determine how to deal with smaller budgets. They also needed more time to serve the rapidly growing number of poorer patrons who flocked to libraries for help-wanted advertisements, do-it-yourself information, novels to while away the idle hours, and simple warmth. By 1931 membership in RILA had dropped to 94 people—in 1903, RILA's first year, it had had 93 members.

Librarians also had to stay home in their libraries to fight for their jobs. For example, in 1933 the Central Falls Library Board replaced a nonresident librarian with a resident nonlibrarian for political reasons. At the Pawtucket Public Library the board demoted its librarian and replaced her with a newspaperman, again for political reasons. RILA protested both actions, noting that "dismissal should be for cause only" and that "an opportunity should be given to the librarian to remove whatever obstacle or condition seems to constitute the cause."

Certification of librarians was again tabled as a costly issue in time of economic depression. The *Bulletin* dealt mostly with conference programs, personnel notes, and events in local libraries—with safe things, as it would continue to do (with the exception of a few 1937–1938 articles) for years. Traveling libraries were discon-

tinued for want of money. And the major issue of the day was reduced to the mutilation of picture books and periodicals by students doing school projects. Conferences themselves dwelt almost wholly on the innocuous, on local history, local poetry, and, of course, booklists. By 1936 about all that could be said was that RILA always held an annual conference and always held its budget in the black. And it always has. By 1936 the only bright spot was the new State Librarian Grace Sherwood's administration of the RILA-endorsed Works Progress Administration program for libraries. Since a 1935 state government reorganization placed the State Library in the Department of State, with authority over public libraries, and removed the Board of Education from the public library world, it was unfortunate that Miss Sherwood was henceforth a rather disinterested figure in public library development.

RILA presidents of the 1930s and early '40s—William D. Miller, Bess McCrea, Sallie Coy, Norman Kilpatrick, and Muriel Wyman—found it impossible for RILA's Committee on Relations with the State to achieve the association's major project of the period: certification of library staffs in order to credibly secure additional state salary and book funding. A RILA request for $29,500 in aid was rejected and state support continued at $17,000 per year. Between the state's reluctance to part with library salary funds and the opposition of small libraries to certification, the certification idea gradually died. By 1942 only a half dozen libraries in the state were willing to accept even voluntary certification. However, postwar development of library graduate and technical assistant programs would soon certify some of the competence and salary standards that could not be achieved during the depression.

Poverty brought one improvement, when RILA observed the difficulty that underpaid staffs had in furthering their education, and established the RILA annual scholarship in 1940. Overall though, the association had become very quiet—with the exception of Clarence Sherman, who led the certification campaigns and continuously asked difficult questions such as, "Should libraries in wartime stock books representing the views of both sides?"

The advent of World War II brought a momentary flurry of activity with RILA issuing a new handbook, with RILA supporting the State Library's Armed Forces Book Pool to send books to troops at home and abroad, and with the establishment of War Information Centers in the libraries of Brown University and the public libraries in Providence, Westerly, Woonsocket, and Newport. Nonetheless, wartime RILA Presidents John Norton, Francis Allen, and Edna Thayer soon found the library world quiet enough to reduce association conferences to one a year. With the war's end and the return of many librarians from service—and also RILA interest in a world peace organization, the problems of demobilization, a new technology created by war, and new library media of phonorecordings, film, microfilm, and paperbound books—RILA found that its view had broadened. Federal funding legislation for libraries which the association had opposed in the 1930s was now wholeheartedly endorsed in 1947, as was ALA's Library Development Fund to establish ALA representation with the federal government in Washington. A new

handbook was quickly published to list a record 225 members. And in 1947 that membership passed President Stuart Sherman's resolution asking the United Nations to control atomic energy so that it would never again be used in war. In the same year the Providence Public Library established a complete file of the RILA *Bulletin*, which it has maintained to this day.

The Federal Library Demonstration Bill was proposed in Congress in 1947 and RILA began to hope that it would bring some answers to Rhode Island's long-standing problems with weak library cooperation, absence of regional services, lack of a statewide bookmobile service, and want of demonstration libraries as models. Despite Stuart Sherman's lament in the May 1948 *Bulletin* about "mediocre" state service (at 38 cents per capita support) and his criticism of "serious" library personnel deficiencies in Rhode Island, RILA's hopes rose even higher with the publication of ALA's *National Plan for Public Library Service*. RILA itself undertook a statewide survey of libraries in 1948, in preparation for the passage of the Library Demonstration Bill. But these expectations were not fulfilled. The Library Demonstration Bill was defeated in 1950 despite strong efforts by Stuart Sherman and Grace Sherwood, and a RILA campaign to increase state aid from $14,000 to $42,000 in book funds brought only a $6,000 increase.

Association members rejected a joint conference with the Massachusetts and Connecticut Library Associations and the New England Library Association similar to ones held in the past, on the grounds of time and cost per member, and a joint conference was not again attempted. Curiously, RILA appears to have never repeated its best state programs at later NELA conferences.

Except for RILA opposition to the "red menace" scares that made it difficult to keep certain titles on school library bookshelves, the RILA presidencies of H. Glenn Brown, Ellen Stone, Jeanne MacCready, and K. K. Moore (from 1949 to 1953) reflected considerable quiet in the association. In 1949 the RILA Executive Board refused to go on record as favoring or not favoring library unions. Delay after delay plagued the Federal Library Services Bill which had succeeded the Library Demonstration Bill. While a new association handbook was issued in 1952, the *Bulletin* remained singularly devoid of issues and news, even to the point of failing to announce upcoming RILA conferences. The 1953 conference—devoted to television, its educational possibilities and its effects on reading—stood alone as the only exciting event. What else could be expected in 1953? Joe McCarthy was screaming, the Korean War appeared eternal, and "I Love Lucy" topped the television rating charts as RILA completed its second quarter of a century—but, Rhode Island libraries had somehow survived, just as they survived the hurricane of 1938 and another to come in 1954.

The Modern Era

The beginning of reform, a modern spirit, a belief that something could be done (and out of sheer desperation, that they had to do it) seized RILA members in 1955

when the association recommended that all boards of public library trustees approach their towns for substantial budget increases. Furthermore, RILA proposed additional education for librarians and library trustees in budget matters after the first tough RILA survey defined the financial disaster in the state's libraries. That survey of 59 public libraries showed that only five exceeded the ALA minimum recommendation of $1.50 per capita support. The survey also stated that service depends on money and that money was sorely lacking, with 25 libraries having less than 30 cents per capita support. (Twenty years later the average library in Rhode Island was to have a dozen times as much money.) If it were not, the survey concluded, for librarians in many cases working for next to nothing, and in some cases donating their salaries to the book fund, many libraries would cease to function. That was the situation only a little more than 20 years ago in the state.

In 1955, a 15-week library technical assistant course approved by RILA and conducted by the Extension Division of the University of Rhode Island at the Providence Public Library signaled the end of even the best programs for informal in-house training. Virtually alone in the state, the Providence Library had offered such training for years, and totally abandoned it only when the Extension Division took over library technical instruction completely in 1958. Also at this time, exhibits were becoming a common part of RILA conferences. RILA was also attempting to set more specific goals for itself, affirming that a state library association should promote practical workshops, the state library budget, state aid and legislation, and library publicity.

Unfortunately, when the Library Services Act passed in 1956 after years of waiting, the Rhode Island General Assembly did not choose to appropriate the state funds necessary to secure the federal dollars. Under RILA President David Jonah, however, the association did draw up a plan for use of the federal and state money when it might be available; and when the money was appropriated by both Congress and Rhode Island the following year, rural library service came to the state. Established July 1, 1957, Rhode Island Public Library Services in Rural Areas, as it was then known, was placed under the secretary of state, who also oversaw the State Library. Public Library Services replaced an impoverished Extension Service that the State Library had previously operated, and Public Services brought a budget of $61,500, over three times what the Extension Service had had. Under its new director, Elizabeth Myer (who had run the old Works Progress Administration Library Project), Public Library Services developed and brilliantly. Within 2 months statewide bookmobile service had commenced to unserved areas, $500 yearly grants were being awarded to rural libraries, a collection of current titles for loan was made available to them, and Miss Myer herself began serving as a field consultant. In the meantime the Armed Forces Book Pool came under fire because RILA wanted the $5,000 used for it each year to be reallocated to public libraries within the state. Also in 1957, RILA became a chapter of the American Library Association.

A division between school and public libraries (extending back to 1935 when public libraries were removed from the jurisdiction of the Board of Education and placed under the State Library) continued to produce problems. And despite con-

siderable recruiting efforts and a special dues structure for school librarians, RILA still failed to attract them. Even so, in 1958–1959—under Dorothy Budlong's RILA presidency—a membership campaign raised the number of members from 277 to 434 within a year.

From 1957 through the early 1960s the excitement generated by the Rural Library Services program became contagious, and on numerous occasions RILA went on record recognizing the significant accomplishments of the program, which served 42 public libraries with a host of services from centralized processing to book discounts. RILA also became interested in the role of the library in high school equivalency programs, in service to the aging, in the Great Books Discussion Groups, in prison libraries, in assisting Rural Library Services in the weeding of dated library collections, in radio and television publicity for libraries and for National Library Week, in collection development concepts, in recruiting for librarianship, in young adult services, and in friends of the library organization. Issues were quickly becoming those that would easily be recognized as crucial by a young librarian of the 1970s.

The single event which more than any other led to modern library service in Rhode Island was triggered by a conference cosponsored by RILA, the Rhode Island School Library Association, and Brown University in 1959 to study school library service. Conferees soon found their attention directed at service in all types of libraries. They concluded that low standards and severe underfunding were major problems; that a stronger professional association and more state leadership was necessary; that many public libraries were receiving thoroughly insignificant appropriations; that too many libraries were operating with completely untrained staffs; that except for Brown University, state college and university libraries provided no support to other libraries; and that in general there was a serious lack of coordination among all libraries in the state. Consequently, with a Council of Library Resources grant, Brown sponsored a thorough statewide study of all libraries. That landmark study—*Library Cooperation*, by John Humphry with the assistance of Lucille Wickersham—was published by Brown in 1963. Humphry and Wickersham found that 32 of the existing 74 public libraries in Rhode Island had less than a $1,000 yearly budget. Today, in a consolidated network of 45 public libraries, only nine have under a $10,000 yearly budget. Exclusive of federal money, total state aid in 1963 amounted to only $20,000—today, state and federal aid is approaching the $1½ million mark. In 1963 Humphry noted that many librarians were trained only as housewives and that many library collections dated from 1880 to 1930. Under the RILA presidencies of F. Charles Taylor, Dorothy Barre, and Elizabeth Myer, the Humphry findings were thoroughly analyzed, especially in two mass meetings at Brown University in October 1963 and January 1964.

From 1960 to 1963 RILA also made suggestions to the New England Library Association for its reorganization, presented Representative John Fogarty of Rhode Island with a citation for his work in securing Library Services Act appropriations, recruited professional librarians intensively, established an Association Trustees Committee, witnessed the establishment of a long-desired full graduate library

school at the University of Rhode Island, supported passage of the New England Interstate Compact as Rhode Island law for New England-wide interlibrary loan, issued a new handbook, and passed a new constitution. The RILA *Bulletin* developed an entirely new orientation, paying less heed to factual information about library personnel and events, and paying more attention to educating members in the major issues of the day; it was turning out to be much more controversial, and much more readable.

If 1963 was an exciting year, 1964 was much more so. Back in 1962 a State Legislative Commission on Libraries, headed by K. K. Moore, had been appointed to revise archaic library laws and regulations (e.g., the Book Pool program). This commission—composed of state legislators, RILA and other public members including Elizabeth Myer and Dorothy Budlong, and the state librarian—filed its report after evaluation of the Humphry study and after numerous hearings. Filing and a 700-guest legislative party took place in January 1964; and in a mass meeting of RILA at the Providence Public Library in February 1964 the commission's conclusions were heard and approved. Commission recommendations included:

1. The creation of a new state department of library services with a board of library commissioners empowered to operate the state library, all extension services, and the state archives
2. Expanded state aid to city and town libraries
3. Creation of principal and regional libraries and research centers
4. State funding for library construction

The Legislative Commission and RILA completed their work just ahead of the federal government, and shortly after the February RILA conference, President Johnson signed the Library Services and Construction Act and state legislation was introduced in the Rhode Island General Assembly in accord with LSCA. In the spring of 1964 the General Assembly passed state legislation on the basis of the Legislative Commission and Humphry reports and in accord with LSCA. Rhode Island was the first state in the Union to accomplish that. Many, many hundreds of people and their instruments had been brought together as for the production of a major symphony, the major event in Rhode Island library history: the creation and performance of a well-funded, effective, comprehensive, state library cooperative network. Credit for orchestration and conducting goes overwhelmingly to RILA president Elizabeth Gallup Myer. If Rhode Island Congressman John E. Fogarty can be called "Mr. Library" for his support of LSA and LSCA legislation, then Elizabeth Myer must be considered the "Great Librarian" in the state's history; for it was she who, according to James Healey's 1974 *John E. Fogarty*, introduced Fogarty to library issues, and it was she who directed his attention to libraries and kept it there for many years. It was she who prodded and cajoled scores of Rhode Island libraries not only into seeing the possibility of library cooperation, but into enthusiastically supporting it. And it was she who was appointed the first director of the network and who spent the next 10 years developing it into one of the most effective library systems in the nation.

On July 1, 1964, having concluded 2 years as RILA's most energetic and foresighted president, Elizabeth Myer became head of the Rhode Island Department of State Library Services. While the new department did not include the State Library or the State Archives as recommended, it did follow the other recommendations. A system was immediately created with Providence Public Library as the principal public library, Barrington and Westerly Public Libraries as regional libraries, and Brown University Library as the special research center. These libraries were charged to provide interlibrary loan service to the public, library grants were issued to all cities and towns, workshops were regularly scheduled, a large collection was created for loan to public libraries, a professional reading collection was established, consultant service was offered to every library, and vehicular delivery of library materials began. In the next few years the system would grow to include the public libraries at Warwick and Pawtucket as regional libraries, and Rhode Island College and the University of Rhode Island Libraries as additional research centers—all connected by teletype and vehicular delivery, a marvel of concentrated efficiency in a state 48 miles long and 37 miles wide. Today Pawtucket, for example (with the assistance of other libraries in the system), fills 85% of its interlibrary loan requests.

Also on the basis of the Humphry report, state standards for school libraries were established in 1964, and with the appointment of a school library coordinator the state was prepared for the flood of Elementary and Secondary Education Act monies that appeared in 1965. Unfortunately, although the Department of State Library Services was charged with coordination of all library effort in the state, school libraries remained (and still remain) separate entities under the authority of the Department of Education. While some of them have been served for over a decade by the public library regional system, and while RILA made particular efforts in 1967 and 1976 to draw school and media associations into some state unity, neither school libraries and media centers nor the Department of Education have reciprocated with support in money or materials to public libraries.

Other events of 1964 included the opening of new university libraries at Brown and the University of Rhode Island; the opening of a new central library in Warwick, which would soon provide regional service to the western part of the state; and full-time operation of the new Graduate Library School at the University of Rhode Island under a new dean, E. J. Humeston.

In the November 1960 RILA *Bulletin*, Maribelle Cormack had complained of the monumental indifference of city and town fathers to libraries that had characterized the 1930s, '40s, and '50s. And she found that the problem lay with librarians themselves: "Too many of us are ladies for one thing. Ladies in the sense that we are not aggressive fighters. We should perhaps try being fishwives." By the mid-1960s many Rhode Island librarians had become as noisy as fishwives, and many were selling libraries to politicians as fast as a fishwife moves fish.

The last half of the 1960s—under RILA Presidents F. William Summers, William Alexander, Selby Gration, Janice Mages, Richard W. Robbins, and Richard Combs—was a period of consolidation and refinement of LSCA concepts by the Department of State Library Services and the Rhode Island Library Association.

In the same years RILA members were also discussing automation, library education, salaries, personnel policies, possible school and public library cooperation, central processing, film and tape recordings, media centers, and outreach programs. The issue of certification was raised again, but it had been made largely moot by the triumph of graduate and technical library education in Rhode Island and by the setting of standards for libraries by RILA. In 1965 RILA created its first comprehensive public library standards, which were then approved and enforced by the Department of State Library Services and the Board of Library Commissioners for grants to individual libraries. In 1967 RILA completed standards for regional libraries, which also were enforced by the Department of State Library Services. After RILA discussion, the Department of State Library Services and a number of public libraries established the independent Rhode Island Library Film Cooperative to purchase and circulate films to public libraries. It presently holds 1,000 films. The *Bulletin* was growing more and more sophisticated, with a new format, regular quarterly issues, focus on rather radical topics, substantial articles on planning and development, a calendar of events, and by 1971 a list of area career opportunities. Also, RILA commenced spot announcements regarding libraries, on both radio and television.

In 1969, under President Jean Nash, the pressures created by the Vietnamese War and the Nixon administration began to divide RILA as they divided the country. A RILA resolution from Leo Pinson protesting the conduct of the Nixon administration in Vietnam was tabled by a vote of the membership. With a delightful sense of irony Pinson then proposed a resolution asking for RILA approval of the Nixon administration's conduct in the war. A second could not be found for the latter resolution. RILA also tabled a motion to deplore the efforts of the highest government officials to suppress dissent. The following year, under President Charles Crosby, the issue of the rights of librarians in employment was set aside by the RILA Executive Board as "too deep" for the association. Confusion was sufficient by that time for Crosby to ask if RILA should continue as a "chicken salad operation" (the levels of meaning here could be explored at length); for members to wonder if the *Bulletin*, at a publication cost of $500 per issue, was worth the rising expense; and for splinter media groups to begin formation. So RILA set out to reexamine its goals.

Much was done, however, in the state in the meantime. In 1971 the University of Rhode Island Graduate Library School was accredited by the ALA; and a full library technical assistant program was offered by the Extension Division of the University of Rhode Island. Topics of RILA interest in the early 1970s were social responsibility, cable television, special collections, service to the handicapped, National Library Week, a campaign for more state aid, posters, film loops, toys and other realia, continuing education, women's liberation, library renovation, staff development, and a headquarters for RILA. Without sufficient funds for a separate headquarters, the association accepted Charles Crosby's gracious offer of the Providence Public Library as its headquarters address. Intellectual freedom was, and has been ever since, a major focus of interest. In 1971 attempts to remove the *Sen-*

suous Woman from the Cranston Public Library, a raid by local police on the Warwick Public Library, and a new, tough state obscenity law awoke and revitalized the RILA Intellectual Freedom Committee. In the following year it secured the state attorney general's opinion exempting libraries from the new obscenity legislation. Also in the early '70s, RILA revised the standards for regional libraries, issued its first trustees handbook, and with the Department of State Library Services successfully opposed the ouster of a local librarian on nonresidency grounds as local interference with the state-guaranteed authority of library trustees.

Through the RILA administrations of William Alexander, Richard Olsen, Paul Crane, and Paul Bazin (from 1971 to 1975), RILA and the State Department of Library Services fought the LSCA, ESEA, and HEA cuts threatened by the federal government in the Nixon years; and federal pressures did not finally predominate. Membership rose to the 800 mark in RILA; with RILA input, the Department of State Library Services completed its first 5-year plan for library services; and RILA passed a new constitution with three super-committees governing the many existing committees. The roles and relationship of the Department of State Library Services (DSLS) and RILA became more defined, with RILA promoting debate on controversial issues and embodying controversial solutions in proposed programs and program-funding legislation. RILA had become—as it still is—the forum for exploration, for formulation, and for the search for funding. With a project and necessary funding approved by RILA and the state or federal governments, DSLS then administers the project as part of the governor's overall program. There are healthy exceptions to this rule, of course, such as the DSLS grants allotted each year to innovative projects generated in individual libraries.

In 1973–1974 RILA proposed new legislation for service to preschool children, to the homebound, and to the economically disadvantaged—without success at the state level. And in the same year RILA issued new *Guidelines* (not standards this time) for public library services. The product of several years of debate and the failure of an earlier draft, the *Guidelines* primarily affirmed that the public library is the primary information source for the whole citizenry, that every library should be accessible to all, that every library should cooperate with all others in all media, and that every library should promote its purpose aggressively.

With the RILA presidency of James Giles in 1975 came a passing of the fear of federal monetary cutbacks, and an even greater concentration of RILA energy on the state situation. RILA's old Ad Hoc Committee on Goals had proven somewhat ineffective, so RILA organized and passed a "Long-Range Plan for the Association" with the objectives of engaging a library publicist for the state, of developing a program for continuing education in cooperation with DSLS and the University of Rhode Island, of promoting a statewide library card, and of securing a state school library coordinator. An Ad Hoc Long-Range Planning Committee finally rejected the idea of a publicist as too costly for the association at that time. However, the Planning Committee did have the Education Committee develop an excellent plan for continuing education of library staffs. The Planning Committee did add pressure for the appointment of a school coordinator, who was

appointed. And another ad hoc committee today continues the debate over the statewide borrower's card. So successful was the Planning Committee in its achievement in the realm of the possible that the "Long-Range Plan" would probably be updated if the same sort of future library planning were not about to be done in the upcoming Governor's Conference on Libraries in February 1979.

Four RILA library bills with excellent information packages were submitted to the state legislature in 1975–1976, and one bill passed, thereby increasing state aid for public libraries from 25 to 30 cents per capita. This was the first significant legislative success for public libraries since 1964. In 1975 the RILA scholarship was suspended because of the rising cost and the oversupply of librarians. Some money that had previously been expended for it was reassigned to improvement of the *Bulletin* in a new format of 11 issues a year. The *Bulletin* now proved to be quite critical, even to the point of regularly criticizing RILA itself. A helpful *Intellectual Freedom Manual* was issued by the Intellectual Freedom Committee to guide librarians in censorship disputes. In the face of growing competition from commercial book processing, the central processing center at the Department of State Library Services collapsed, to the dismay of many RILA members. A RILA search committee for a new director at the Department of State Library Services—after the resignation of Elizabeth Myer—failed in its purpose completely when the governor, after encouraging it, ignored its recommendations. RILA interest in data banks, the New England Library Board, the New England Library Information Network (Nelinet), and the New England Document Conservation Center grew considerably.

In 1976–1977 RILA, under President Daniel Bergen, supported five library bills in the General Assembly. Through the vigorous efforts of the RILA Government Relations Committee and the new RILA lobbyist Robert Perrson, four of the five proposals were successful in whole or in part. This astonishing success meant that regional library budgets rose approximately 30%, the Rhode Island Film Cooperative received $5,000 more in state aid, $7,500 was allocated to each of two new research center libraries (at Bryant and Providence Colleges), and Providence Public Library received $50,000 more as principal public library for the state.

In 1976 the Graduate Library School at the University of Rhode Island lost its ALA accreditation, and RILA is now working closely with the school for its reaccreditation by 1978. The Intellectual Freedom Committee most recently conducted a workshop on the rights and responsibilities of librarians. The Education Committee presented another workshop on commercial processing, and the Statewide Card Committee held still a third workshop on an unrestricted state borrower's card. In the spring of 1977 the Intellectual Freedom Committee beat back two strong pieces of obscenity legislation. The Membership Committee issued a new handbook, or directory of members. Conference Committee Planning has grown better than ever, and John Berry, Daniel Gore, and Celeste West attended the 1977 fall conference. The Outreach and Public Relations Committees planned added television publicity for libraries to begin in 1977–1978. Attempts to revitalize the Trustee Committee have not been so successful, but they continue.

Four more ad hoc committees have been added to the above roster, for revision of the association constitution and bylaws, for children's services, for reevaluation of the legislative procedure, and for coordination between RILA and other state information agencies. All of these committees report directly to the Executive Board or to super-committee chairpersons on the Executive Board. The board is composed of the president; the vice-president; the treasurer; the recording secretary; the corresponding secretary; the ALA counselor; the New England Library Association counselor; the chairpersons of the Professional, Administrative, and Public Relations Committees; and the *Bulletin* editor (ex officio). The board for the first time, in 1976, established complete goals and objectives for each committee and for the association in general in its revised 1976 constitution. The association goal as stated in its constitution is:

> The objective of the Association shall be to promote library and information services in the state of Rhode Island and encourage interest in libraries, information centers and librarianship.

Today RILA operates in an atmosphere of considerable cooperation with the Department of State Library Services and its director, Jewel Drickamer. Approximately $5 million is spent by public libraries in Rhode Island per year, with approximately another $1½ million expended in state aid to, or administration of them. They in turn circulate well over 2 million books and other library items a year. RILA's annual 1977 budget was $13,050, as compared to its 1917 budget of $180. There has indeed been great achievement in building a great library system.

Future Challenges

Considerable problems still face RILA and its current president, Ardis M. Holliday. Additional funding legislation is necessary simply to meet inflation. A Governor's Conference in preparation for a White House Conference on Libraries must be planned with the Department of State Library Services.

Though the association is more active than ever, membership is predominantly composed of graduate librarians and public librarians. And membership has declined by 25% because of recent dues increases and the growth of splinter library and media groups such as the R.I. Social Responsibilities Round Table, the regional Association of College and Research Libraries, the R.I. Educational Media Association (a merger of the Rhode Island School Library Association and the R.I. Audio-Visual Education Association), and the R.I. Special Libraries Association.

The separation (now four decades old) of school and public libraries under the authority of two separate state departments has never worked for a unified library association. Library cooperation, a major problem at the beginning of RILA's third quarter century, is only partly solved as the association approaches its fourth quarter century. The symbol of Rhode Island is the independent man, whose figure

stands atop the State Capitol. Independence has been a Rhode Island tradition since Roger Williams founded the colony to escape all authority, since the colony was the first to rebel against Great Britain, and since the time when other colonies almost invaded to force Rhode Island to join the other first 12 states in forming the United States. But RILA and other associations of information specialists are finally going to have to realize that independence among small groups, all devoted to information provision, is no solution in meeting the current problems so recently and so well defined by the American Library Association: rapid social change, technological revolution, economic austerity, free and universal information access regardless of the profit to be had from commercial information production, and professional protection of employment security and salaries. The latter issue—salaries, grievance procedures, employment protection, and bargaining—is the other question that RILA faced without success 25 years ago; and unlike the problem of library cooperation, it is the one to which not even partial solutions have been found. It can only be hoped that the Rhode Island Library Association will effectively address this problem in the coming years, and if necessary the coming quarter of a century, with its revival of the RILA Special Committee for Arbitration, Mediation and Inquiry. As Elizabeth Myer said in the April 1963 *Bulletin*:

> We do not wish to stand still. We do not want to go back into the past. We admittedly do not know the answers to all the questions of what is best for the future. We do have the means, however, of working out a solution in the right kind of service for our beloved State.

BIBLIOGRAPHY

Prior to this paper no history of RILA has existed. This history was written (except for two titles noted therein) entirely from the RILA Archives at the Library of Providence College, Providence, Rhode Island. These archives contain RILA's annual reports, Executive Board meeting minutes, fall and spring and other conference summaries, and most issues of the *Bulletin*. These archives are at present an untapped mine for further books and articles on a general history of Rhode Island libraries, for histories of individual libraries, for biographies of several great librarians, for a history of great local library scandals, and for histories of library developments in intellectual freedom, legislation, public relations, the state library, the Department of State Library Services, and library procedures.

A full run of continuously published *Bulletins* from 1927 to the present is available at the Providence Public Library. Prior issues from 1908 to 1912, published by the R.I. Board of Education, are currently untraceable and may be buried in the archives of the R.I. Department of Education.

The two significant volumes on Rhode Island libraries cited in this paper are John Humphry's *Library Cooperation* (Brown Univ. Press, Providence, R.I., 1963); and James Healey's *John E. Fogarty: Political Leadership for Library Development* (Scarecrow Press, Metuchen, N.J., 1974).

Yearly updates of library news from the state, from RILA, and from the Department of State Library Services in Rhode Island are written by Emil Ciallella, Jr., and appear in each edition of the *ALA Yearbook*.

Recent copies of the RILA *Bulletin* are available from the editor on request, care of the Providence Public Library. Other queries regarding RILA may be addressed to the RILA president, care of the Providence Public Library, 150 Empire Street, Providence, Rhode Island 02903.

LEO N. FLANAGAN

RHODE ISLAND. UNIVERSITY OF RHODE ISLAND GRADUATE LIBRARY SCHOOL

The need for publicly supported education in librarianship was strongly felt throughout New England in the early 1960s. Each of the state universities examined the feasibility of establishing a library school, but the University of Rhode Island (URI)—which had been offering, through its extension division, a series of courses in library procedures since 1957—was in the best position to institute a program in librarianship at the graduate level. University President Francis Horn strongly supported the creation of a library school, and as a result the Board of Trustees of State Colleges for the State of Rhode Island granted permission for a graduate library school on October 3, 1962. The school admitted its first students in the fall of 1963 and graduated its first class in the spring of 1965.

Dr. Jon R. Ashton was named dean of the school in the spring of 1963. Dean Ashton came to the position with a wealth of experience in librarianship and in teaching in library schools. He began his new position with high hopes of establishing an innovative program of high quality in a short period of time. While the president of the university had been a prime advocate of the school and various councils of the university and the Board of Trustees had approved its creation, it seems that neither he nor they shared Dean Ashton's zeal for the rapid development of the school. The first year's budget was $20,000, with $45,000 allocated for the second year. This was in marked contrast to the $75,000–$100,000 which Dean Ashton felt necessary. Dr. Ashton resigned his position after the first year. During that first year some concrete accomplishments were made. The school established itself in the Extension Division Center in Providence and started renovation for offices and classrooms. The nucleus of a faculty was formed with the appointment of three full-time persons. A library science library was started. A curriculum was established leading to the degree of Master of Library Science, and the program proved that it could attract students in large numbers.

Dr. Edward J. Humeston, Jr., became the Graduate Library School's second dean on September 1, 1964. Prior to this appointment Dr. Humeston had been director of students and director of curriculum, as well as professor of librarianship, at Drexel's Graduate School of Library Science from 1959 to 1964. His extensive experience also included teaching at the University of Texas from 1948 to 1954. He was head of the Department of Library Science at the University of Kentucky from 1954 to 1959.

Quite different from that of his predecessor, Dean Humeston's leadership provided a slow, steady growth for the school. The faculty was increased from three in 1964, to eight in 1975. The budget, physical facilities, and library holdings were also steadily increased and improved. The student body, however, increased dramatically. In the fall of 1964 (the first semester the school was in full operation) there was the equivalent of 70 full-time students. The enrollment for fall 1975 was the equivalent of 245 full-time students.

While Dean Ashton had plans for innovative approaches to library education, Dean Humeston felt that the road to a quality school and to accreditation lay in the development of a program which incorporated the time-tested traditional methods developed in American library schools. As shaped under him, the program consists of a series of basic core courses making up nearly half of a student's course work. Electives beyond this core of basic material provide some measure of specialization in either public, special, school, or academic librarianship. Other electives are designed to allow for advanced instruction in a variety of types of library activity. Students are also encouraged to take graduate-level courses in other departments within the university when such courses strengthen the individual student's program of study.

By 1967 it was becoming increasingly apparent that the school must ready itself for accreditation by the American Library Association. One key consideration in this was the school's location. The original decision to locate the school in Providence had been based on the fact of population concentration. Other original expectations were that a large degree of cooperation would obtain, whereby students would have free use of academic libraries in and around the city, and that these libraries would purchase materials to fulfill the needs of library school students. This cooperation never fully materialized, leaving the library school with inadequate bibliographic support. In fact, the school in Providence lacked many of those things which a proper campus setting provides. As the school sought to ascertain its strengths and weaknesses it obtained the services of Dr. Neal Harlow, dean of the School of Library Service at Rutgers, as consultant. He recommended, among other things, that the school be relocated to Kingston, the university's main campus. This recommendation was carried out in June 1969. It proved an important step, as the quality of education improved measureably in ensuing years.

With Dean Harlow's recommendations as guidelines, the school concentrated on meeting the requirements for accreditation. The school requested and received a visit by an accrediting team of the Committee on Accreditation of the American Library Association. The visit came in March 1971 and that summer the committee voted to accredit the program.

The news of accreditation was received by the school as a signal for the beginning of an era of expansion and a drive toward excellence. Accreditation did result in greater interest in the school and greater enrollments of very high caliber students, but it came at a time when the university was unable to provide the increased financial support which excellence in education requires. The result was that the faculty became increasingly overburdened with teaching large classes, supervising

large numbers of students, and attempting to provide all the services which a larger organization provides its students. At the same time the school was developing its regional program, which put an added strain on its resources.

At the inception of the school, the New England Board of Higher Education designated the University of Rhode Island as *the* state university empowered to operate a program in library science in New England. This meant that students from other states in New England would pay in-state tuition rates for courses taken in the library school, but it also meant that URI was responsible for publicly supported education in librarianship throughout New England. Toward fulfilling this obligation, the school undertook to offer courses, taught by Graduate Library School and adjunct faculty, at centers in other states. Initially, courses were given at Hartford, Connecticut, but it quickly became apparent that, if the program were to have a measure of quality equal to that offered on the Kingston campus, courses should be taught only at the campuses of the state universities. Thus a program developed whereby a student could take a major part of his program at the University of Connecticut at Storrs, or at the University of Massachusetts at Amherst, or at the University of New Hampshire at Durham. To date, the regional program has offered the opportunity of library education to a relatively large number of exceptionally qualified people. It also has provided the Graduate Library School with an education in the difficulties of true cooperation among universities.

As the mid-1970s approached the school prepared for its visit by the Committee on Accreditation for reaccreditation under the 1972 ALA standards. In April 1976 a team evaluated the program and, based on that evaluation, the committee voted to withdraw accreditation from the school. Deficiencies found were, among others, that the student/faculty ratio was improper, that the faculty was overextended, that the faculty was undertaking too little research, and that the curriculum failed to offer a sufficient variety of courses.

The year 1976 was one of decision and departure for the Graduate Library School. Along with loss of accreditation, Dean Humeston (having reached the mandatory retirement age) left the school. At the end of 1976 the school was undergoing the painful process of reevaluation and reconstruction in order to regain accreditation, under the direction of Acting Dean Nancy Potter. In 1977 work toward reaccreditation continued while an intensive search for a permanent dean was undertaken. This search culminated in the appointment of Dr. Bernard S. Schlessinger, who took office in July 1977.

Dr. Schlessinger had been, just prior to coming to Rhode Island, professor of librarianship at the University of South Carolina and, before that, professor of library science and assistant director of the library school of Southern Connecticut State College in New Haven. His background also includes experience in special libraries and medical research.

Under Dean Schlessinger's energetic leadership, the school has adopted a 5-year plan for excellence, has developed new spacious quarters which will be occupied in spring 1978, and has completed the self-study requirement of the reaccreditation process. At the time of this writing, the dean and faculty look ahead with a shim-

mer of excitement to reaccreditation and, beyond that, to the development of a superior instrumentality for library education.

JONATHAN S. TRYON

RHODESIA, LIBRARIES IN

See also *Africa, Libraries in*

Origins

The country now known as Rhodesia has a varied population consisting of nearly 6 million Africans, 275,000 Europeans, and 29,000 persons of Colored and Asian ethnic groupings (*1*). Several African languages are spoken; English is the main language.

The country was at one time inhabited by Bushmen. Bantu migrations from the north took place from the 11th century onward, and from the south, from the 18th century onward. There is no record of any writings or collections of writings attributable to these peoples. The first permanent European settlement occurred in 1859. The territory was occupied and administered by the British South Africa Company from 1890, and subsequently, under successive constitutions, by the various governments of Rhodesia to the present day.

There were Arab influences on this area of Africa from about the seventh century, when Arab traders traveled from the coast up the Zambezi and Sabi rivers. Many Muslim writers described the flourishing commerce in gold, ivory, iron, and slaves. This trade was still active when the Portuguese arrived on the east coast during the 16th century. At that time Muslim political influence persisted as far inland as present-day Rhodesia, and it is mentioned in Portuguese records as being an aspect of the court of Monopotapa (*2*).

Some Portuguese and Arabic writings about the territory are extant and have been collected; it is probable that a great many remain to be discovered. There were Portuguese missions and trading posts in the region as early as the 16th century. There are remains of these, and of Portuguese artifacts including cannon, in various parts of Rhodesia today. The missions and trading posts do not appear to have attempted to collect books or even records of their activities; so far, no accounts have been discovered of any effort to systematically accumulate written materials.

The later European missionaries of the 19th century certainly wrote journals and descriptive surveys of their work and of the country and its features, and there are numerous books by travelers and explorers. However, these were generally published outside Rhodesia and, where they were formed into collections of Africana, held in libraries in European countries and in South Africa. There appears to have

been no collection of writings that might have been distinguished by the term "library" anywhere in Rhodesia during the first nine decades of the 19th century.

There were also in the 19th century several attempts by artists, some of them highly successful, to capture the nature and atmosphere of the country. Many of these are extant in their original published form and many have been reprinted.

The first libraries were established, at least as far as present evidence goes, only after the European occupation of 1890. From that date onward there has been a considerable amount of writing, printing, and publishing. The number of companies involved has varied considerably, but in a recent survey it was discovered that there were 42 in Salisbury alone. However, much of the writing by Rhodesians or about Rhodesia has been published overseas and in South Africa. A great deal of the history of the country may be gleaned from the publications of the Government Printer, of which complete sets are held in the Library of the National Archives. That library also holds the most comprehensive existing collections of publications on Rhodesia (*3*). The Library of the University of Rhodesia possesses a smaller collection of Rhodesiana, of which there are printed catalogs in book form (*4*). Some of the older South African libraries also contain collections of Rhodesian material, including the journals and travel accounts of the 19th-century missionaries and explorers.

Within the sphere to which this article relates, the main difference between the 20th century and the preceding centuries is that the present century has seen the production, use, and collection of literature; whereas these activities were previously virtually absent—with the exception of the writings of the 19th century and of the few accounts by visitors and traders prior to that, entirely nonexistent.

Alphabets were ascribed to the African languages after the European occupation, and literature began to appear in the vernacular. Ndebele and Shona are now taught in the schools and at the university. Collections of books in the vernacular have been developed and new books are constantly appearing. A very considerable library of books in African languages is held in the University of Rhodesia Main Library; this is the Doke Collection, for which a catalog has been published. It includes many hundreds of volumes in languages spoken in this part of Africa (*5*).

Afrikaans, the language of about 20% of the European population, has also become a literary language, and several publishing houses in South Africa produce books and periodicals, on literary, scientific, technical, and, indeed, on most subjects. Such material is read in Rhodesia and there has been a good deal of Rhodesian writing in Afrikaans. In this context the influence of the churches on the cultural activities of the Afrikaans-speaking sections of the community must be noted.

There has been a great deal of literary activity in English: novels; biography; history; and scientific, medical, technical, and professional writings by Rhodesians have been published outside Rhodesia as well as within the country. There are thriving literary groups in addition to the many professional societies. A bibliography of Rhodesian fiction from 1890 to the present day is being prepared in the Department of English of the University of Rhodesia (*6*). Several specialized bibliographies have been compiled.

A book trade has been established and developed and there are now many booksellers in Rhodesia. All these activities provide motives for the construction of and progressive interest in libraries. It must be asserted, however, that by far the greater part of literature used and consulted in the country originates outside Rhodesia. Only a small proportion of the needs for literature to further education and cultural development could be satisfied by what has been produced locally. The libraries of Rhodesia, therefore, consist largely of publications that have been acquired overseas. There has never been a nationwide agency for importing publications; there is no centralized control; libraries and the book trade generally acquire materials in accordance with their individual policies and finances and other related considerations.

Thus the early history of libraries in Rhodesia dates curiously enough from as recently as the last decade of the 19th century. There is no evidence to demonstrate the existence before that of private libraries of any size. Such collections may have been owned by individuals or families, but from the extent of materials received as donations by libraries, it does not appear that personal estates included very large collections anywhere in the country. Some smaller collections were brought into Rhodesia by settlers from their homes in England or South Africa, but so far these have proved to be very limited. The main impetus to library activity appears, therefore, to have been the occurrences of interest at various centers in the establishment of public libraries. In almost every case these were the result of the efforts of a society, and in almost every case they depended upon subscriptions for their continued operation.

The earliest library for which there are records derived from a meeting held in Salisbury by a group calling themselves the Reading and Recreation Society. By July 1893 it had developed into a small public subscription library. Most of the well-known English newspapers were received and there was a stock of several hundred volumes. Added to this collection was a library that had belonged to the D Troop of the British South Africa Company's force that had been stationed at Fort Victoria from 1891 to 1892. By 1896 this collection had become known as the Salisbury Public Library. In 1898 a library committee was appointed by the Salisbury City Council. In 1903 the Queen Victoria Museum and Library was opened (*7*). (See Figure 1.)

A feature of many of the new settlements in Rhodesia from the last decade of the 19th century onward was the establishment of recreational and social clubs. They came into existence on the premises of industrial and mining companies, among remote rural communities, and in farming and commercial centers all over the country. They still serve as centers of social activity; they have continued in many cases, from their very beginnings, to serve as literary centers. In them were established many of the libraries of a recreational nature that exist throughout the country today, where present reading facilities have been developed by building upon these efforts.

There are few concentrated areas of European settlement in Rhodesia; outside Salisbury, the largest is Bulawayo. It was there that the earliest focus of commercial

FIGURE 1. *Opening of the Queen Victoria Memorial Library, Salisbury, in 1903 (now demolished). Courtesy of the Queen Victoria Memorial Library, Salisbury.*

and industrial activity occurred. A public library was established in 1896. Cecil Rhodes presented 100 guineas toward the project, and Earl Grey, £50. Several other donations were promised and the library came into existence as a subscription service. In 1897 the foundation stone of the library building was laid by Sir Alfred Milner (see Figure 2). The first qualified librarian was appointed in 1906; this was Dugald Niven, O.B.E., who remained as librarian until 1957. A new library building was opened in 1898, for which the library committee formed in 1897 had been granted space in the center of the city by the British South Africa Company (see Figure 3). The company had also loaned the committee £5,000 with which to construct suitable accommodation. It is of interest to note that originally the intellectual and social life of the community had centered in the two pioneer hotels of the city, and that one of the motives for establishing a public library was the need to fulfill the growing requirements of intellectual exercise and recreation (*8*).

Other early public libraries were those established at Umtali in 1894 and at Gwelo in 1897. In general, the development of library facilities in the early years of this century reflected two conditions: first they were intended for recreation;

FIGURE 2. *Laying of the foundation stone of the Bulawayo Public Library by Sir Alfred Milner. Courtesy of the Bulawayo Public Library.*

second, they did not keep pace with the growth of the community. Industrial, commercial, and farming enterprises developed throughout the country, and they developed fairly rapidly. Immigrants came as a result of this economic growth, but libraries were not systematically expanded to meet the intellectual requirements of society. Nor does there appear to have been much interest on the part of central or local government in ensuring library provision; in the early decades, the library does not appear to have been regarded other than as a recreational facility by any such authority.

This was the main trend in library development up to the Second World War, but there were some events of interest in those years.

Dugald Niven, the librarian of the Bulawayo Public Library, gave a public address in 1916 in which he advocated certain policies for the reform of libraries in Rhodesia (*8*). It was a significant speech, because it included certain proposals that have been the main concern of the profession ever since, and which have reappeared in various forms from time to time over the past 60 years. Yet there was nothing of great innovatory significance in what he said if his proposals are considered in the light of international trends in library services. Niven had been a member of the staff of the Mitchell Library in Glasgow and of the Johannesburg Public Library before taking up his appointment in Bulawayo. The proposals that he outlined had by that time become practice in parts of the United Kingdom and to some extent were being carried out in Johannesburg. Among the changes he advocated were: that libraries be adopted by central and local government authori-

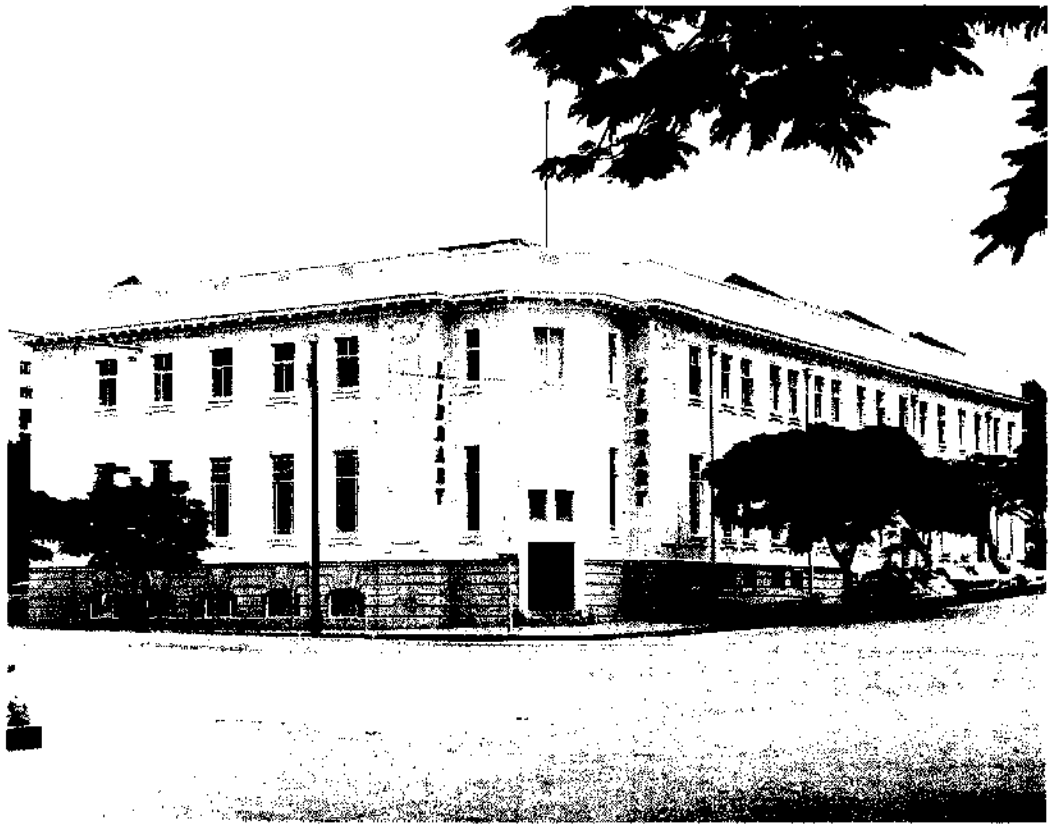

FIGURE 3. *Bulawayo Public Library. Courtesy of the Bulawayo Public Library.*

ties, that they be staffed by officials of these authorities, and that they should be considered a vital part of the national machinery for the general, technical, artistic, and scientific education of the community. He proposed that the smaller libraries in the provinces of Mashonaland and Matabeleland be placed under the librarians of Salisbury and Bulawayo. He described the advantages of mobile libraries and drew attention to the importance of libraries in education. He expounded the need for a state or national library, which, he said, should be wholly supported by government, and which should contain and preserve the national collection.

In 1928, through Niven's efforts, two commissioners of the Carnegie Corporation of New York visited Rhodesia, and at their request he drafted a scheme of library development that envisaged a centralized public library service and the setting up of a national library, and also a union catalog of all the books held in public and government libraries. He also advocated the establishment of a library service for Africans through the appropriate education department. It was his view that, in common with principles of operation in other countries, this service should be financed by the central and/or local government. It was hoped that the Carnegie Corporation would provide a launching grant and thereafter a series of diminishing grants, and that as they diminished, local and national government support would

cover costs of the service. The Carnegie Corporation, however, was only able to offer U.S. $12,500, and payment was deferred, for various reasons, until 1939 (*9*).

During the period between the wars there was a general—if spasmodic, uncoordinated, and unregulated—growth in public library services. These services, which continued to operate on a subscription basis, were administered in mutual isolation. The Turner Memorial Library, constructed in 1902 to commemorate a former resident who was killed in the siege of Kimberley, was enlarged in 1935. The Bulawayo Public Library acquired a new building in 1934: this accommodation is still occupied by that library. It is difficult to discover any significant events elsewhere in the public library sphere during these years.

Outside the public library sphere, the major event was the inauguration of the National Archives. The Archives Act was promulgated in 1935, and the Government Archives came into being in September of that year. In addition to its archival function, the library incorporated some aspects of what Niven had proposed as a state or national library. Niven was, indeed, on the first committee that had to do with the policy of the National Archives, and one of the functions of this committee was to bring before the public the importance of forming a permanent national historical collection. This institution became a legal deposit library. It grew as a center for Central African historical research, but throughout these years it had no building of its own; it was, for example, moved into a room in one of the larger government buildings in 1938 (*9*).

An important event was the founding of the Library of Parliament, in 1923; it is certain, however, that some sort of collection existed from the time of the first Legislative Council. This library, which has always occupied rooms in the Parliament Building in the center of Salisbury, was intended to hold sets of the publications of the government of Rhodesia and the governments of other African countries, of Great Britain, and of other Commonwealth countries. The library has a systematic acquisition of books on politics, law, constitutional history, anthropology, sociology, contemporary history, philosophy, economics, and related subjects (*10*).

Libraries in other government departments had existed for some years. They included periodicals of relevance to the departmental activity and collections of books consulted by professional and technical officers. Again, however, there was no coordinated development of such libraries, and they were administered in isolation. The Department of Agriculture had a library by 1915. The Salisbury Judges' Library came into existence in 1897. The Geological Survey Department established a library in 1910. Many of these were very small; none was of any considerable size; there is no trace of any of them having been run by a qualified librarian. In no case did the departmental library occupy a building designed specially for the purpose.

There were libraries in museums, but, again, they did not form part of a library network and were not constituents of any system. The Bulawayo Museum was established in 1901, and the Salisbury Museum, which subsequently became the Queen Victoria Memorial Museum, in 1901. There were also museums at Umtali

and Gwelo. Library materials had been accumulated from 1901 onward as the result of gift, purchase, and exchange. Exchanges were established after the publication of the Museums Organization's first *Occasional Paper* in 1932. With the exchanges it was possible to acquire the publications of other museums and learned societies, from South Africa and overseas. These libraries fulfilled the functions, however modestly, that are normally ascribed to museum collections; they were primarily used for research. However, their potential value must have been rather limited because there was at that time no consistent acquisitions policy, and there seems to have been no attempt to provide comprehensive coverage in any given field of activity (*11*).

It is difficult to establish what the position with regard to the provision of literature in the vernacular was in these years. Missionaries certainly assisted in the education program and in the spread of literacy. Missionary schools and other centers certainly possessed some collections of books, but it would be incorrect to describe any of them as libraries in the accepted sense of the term—and what literature they possessed was mainly in English.

Written literatures in the African languages of Rhodesia have been emergent from the beginning of the century. There have also been attempts to collect some of the oral modes, although it is important to realize that one does not necessarily supersede the other: oral and written literatures continue to exist together.

Written literature in Shona, for example, started with the need to provide books for church and school, although grammatical works and dictionaries had been published in the 19th century. Methods of transcribing African languages vary: a Shona orthography and system of spelling proposed by C. M. Doke, whose collection of African literature is now held in the University Library, was adopted by the government of Rhodesia for education purposes in 1932.

The participation of the missions in vernacular publication was of some significance. They issued readers, prayer books, hymn books, and devotional literature; and a Shona Bible appeared in 1947. Many works appeared in dialect, but the Rhodesian Literature Bureau encouraged the adoption of a standard form of the language. There have not been many works of creative writing in Shona; there were less than 20 novels in the language by 1960, and attempts at publishing its poetry had not been successful (*12*).

With the Ndebele the situation was even more unsatisfactory; very few creative works have been published in this language. As in Shona, however, there is a Bible, and the missions have assisted in the production of devotional literature. However, the Ndebele read Zulu literature, of which a great deal has been published, including historical novels, narrative poetry, and folktales, some having been accorded a high critical evaluation (*13*).

There is now evident a tendency for different African communities of Rhodesia to read more in their own languages. In the past they have had little opportunity, but as this brief survey of publishing in the vernacular literatures demonstrates, the inadequacy of that opportunity was not primarily attributable to the inadequacy of library services.

Toward the end of the early period of Rhodesian library history (that is, the period up to 1950) there were two major events. The first was the inauguration of the National Free Library. In 1943, after negotiations lasting many years, the service was established in the Bulawayo Public Library. The Carnegie grant was used for the purchase of books, but the first overseas order was not placed until 1945.

From its inception the library operated both through and alongside the subscription libraries. It offered the free loan and reference use—both on its premises and by post throughout the country—of books of an educational character. Although widely advertised, there was a great lack of comprehension on the part of the public concerning the nature and potential benefits of this new institution. However, an appreciation of it was to be awakened, for the library sought to provide material required by those who wished to extend their knowledge and intellectual well-being. As a center for interloans, it had access to the resources of South African libraries and it thereby rendered much assistance to scholars and research workers, particularly in science and technology (*14*). However, by 1949 there had begun to be repeated a statement of a belief in the need for another science reference library. In that year the Annual General Meeting of the Council of the Rhodesia Scientific Association expressed itself strongly in favor of the formation of such a library because, in its view, the National Free Library in Bulawayo did not effectively serve scientific research in Salisbury; members recalled earlier discussions on this topic (*15*).

Yet the project had had many successes, and among these was its provision of monographs on agriculture to members of the farming community and to research establishments. A good deal of demand was also made upon it by operatives in other fields, for its resources and services had been offered to many of the industrial organizations that then existed, including Rhodesia Railways.

The second major event in the library history of that period was the granting of funds by the Beit Trust for the establishment of the Beit Circulating Library for Schools. This was founded in 1943 and was also administered from the Bulawayo Public Library. It was intended to fulfill the needs of government primary schools for collections of books and attempted to do this by means of a circular exchange system. The organization allocated grants to government high schools for the purchase of books for school libraries and also issued graded readers for supplementary reading. Another feature of the system was the Teachers' Reference Library. Such a collection had in fact been in existence for some time in the Government Education Department; this was incorporated into the new institution.

The organization, which appears to have pursued its objectives with commendable effectiveness, was funded by the Beit Trust, its financial resources being supplemented by annual subventions from the Education Department. It is recalled that school libraries, and teachers too, made good use of the service, and that the grants made to high schools relieved them from the costs of building libraries individually (*9*). The service was subsequently described by Varley as the most promising library activity in Rhodesia, and he added that it afforded a unique op-

portunity for setting a high standard in the selection of children's recreational books. School libraries were otherwise in a very poor condition with their inadequate accommodation and parsimonious financial support; they were not systematically organized; there was no education library system; there was no coordinated administration (*16*).

In the course of the period under review several scientific and professional societies acquired collections of books, some of which represented attempts at the formation of libraries. An example of such activities is provided by the Rhodesia Scientific Association, which came into existence in 1899.

By 1900 the association had acquired "books treating of all branches of science and all those relating to Rhodesia in particular" (*17*), and it had established a small reference library. This was to some extent built up as the result of exchanges gained from the association's *Transactions and Proceedings*, the first volume of which appeared in 1899. There was a government grant for the association, and at first its financial position improved very healthily as the result of subscriptions. There was a good deal of encouraging support for its activities; for as Milton (who was then administrator of the territory) asserted, it was desirable for men to have a release from the difficulties and hardships of establishing a living in this part of Africa at that time, and from the mundane task of maintaining their commercial and economic existence (*18*).

Eventually, the bookcase containing the association's library was placed in the Bulawayo Public Library; subsequently the collection was given accommodation in a ground floor office. Little else is said in the *Transactions* of the growth of this collection. It appeared to run into great difficulties during the Second World War when its accommodation, which was then a room in a government department, was commandeered as a military medical store. In 1944 it was made available again to members and in 1947 was reported to be still acquiring publications. At that time, however, members were again unable to make full use of it because of inadequate and unsuitable accommodation. A postal loan service was therefore introduced (*19*).

The Library of the Rhodesia Scientific Association was eventually absorbed by the Library of the University of Rhodesia. The material taken over included books and periodicals in several fields of science, the collection being particularly strong in botany and zoology. The University Library agreed to continue to operate the exchange arrangements on behalf of the association, and its members were given access to the University Library and its facilities. This agreement came about in 1957 and was to be the pattern for similar agreements made when the University Library in due course acquired the libraries of six other societies.

The building of these collections had involved a good deal of effort, and they represented an appreciation, on the part of the early professional associations, of the value of libraries and information retrieval resources. What they possessed of such resources was rudimentary in form and lacking in coordinated administration, but the efforts of these resident groups of scientists, engineers, and administrators were highly commendable and laid the expectations of a community for the

establishment of scientific and special library services. Thus, when such services appeared, they did so because of tangible need that had been given positive expression.

Libraries in Rhodesia Since 1951

The history of libraries in Rhodesia since 1951 may be followed by reference to two reports, both of which include a survey of an existing situation. They were both the results of attempts to assess the quality of library provision and to motivate its growth and development. The first, the Varley Report, appeared in 1951; the second, the *Report* of the Greenfield Commission, appeared in 1971.

Both sets of recommendations were intended to guide future policy on library provision, and to some extent they reflected ideas that had been advanced earlier in the century.

Libraries in Rhodesia have undoubtedly advanced immensely since 1951 and the prospects for growth are good, for there is great need in a developing nation for the literature that relates to the cultural, scientific, and industrial needs of the various communities. Library services are being used increasingly and are subjected to heavy demands.

The appearance of the Varley Report is the first evidence of the advent of the modern period of the history of Rhodesian libraries. It was the product of an invitation from the Central African branch of the South African Library Association to D. H. Varley (then the director of the South African Public Library) to undertake an investigation of the existing library facilities in Southern and Northern Rhodesia and Nyasaland: he was given terms of reference that included the following:

> . . . to consider the information obtained, and to make recommendations for the organization of schemes of development, with their financial implications, for the three territories and for all races (*20*).

The survey included the three territories of what was to become the Federation of Rhodesia and Nyasaland, but this review relates only to Rhodesia and there will be no comments on his report on libraries in what is now Zambia and Malawi.

The second report was issued by the Library Commission appointed in 1970 by the government of Rhodesia, with terms of reference that included the following:

> (i) To consider the present state of the library services within Rhodesia, with particular reference to the public libraries, and the future financing and development of such library services, having regard to the cultural, social, economic, and technical needs of the country and all its individual citizens;
> (ii) To review past investigations of a similar nature and of recommendations resulting therefrom; and
> (iii) To take evidence on desirable standards of library provision and services . . . (*21*).

Information was presented to this commission from individuals, societies, and corporate authorities representing a wide range of interest in libraries. The Rhodesia Library Association forwarded a detailed document comparing services and facilities in Rhodesia with systems in many other parts of the world and making recommendations for the future development of libraries in various spheres of activity. This document was subsequently published by the association (*22*).

External specialists were also invited to give evidence to the commission. H. M. Robinson, the former director of the Transvaal Provincial Library Service, urged that the importance of library services as a vital part of the communication system of the country should be recognized, and that existing services should be formed into an integrated administration (*23*). His evidence was not limited to, nor his recommendations entirely focused upon, public libraries; he insisted on the coordination of different types of library service and the gradual covering of the country with library facilities both to support education and research and to meet the demands of different communities for general literature.

The recommendations of the commission were extensive, and they have been to a considerable degree the concern of Rhodesian librarians since their publication, for they described an attainable mode of progress and served as guidance for the much needed development of services and facilities.

The *Report* was discussed in the Parliament of Rhodesia. In the House of Assembly on August 1, 1972, it was averred that the amount allocated for libraries was inadequate; for example, the grants of the City of Salisbury for library purposes were compared unfavorably with those of the municipalities of Bloemfontein and Pietermaritzburg. The government was therefore urged to examine whether it might be possible to persuade local authorities to contribute more generously. The value of libraries in secondary and tertiary education, and in African education generally, was repeatedly stressed (*24*). Four years later, Parliament was advised of the financial provision that the government hoped to make for the establishment of a pilot scheme for a public library administration—one of the recommendations of the commission (*25*).

PUBLIC LIBRARIES

It was recognized in both reports that the provision of facilities to all the communities of the country would necessitate the establishment of a government-supported administration. The existing public-subscription libraries were limited in resources and in range of operation. Varley asserted that neither the Salisbury nor the Bulawayo library was equipped to serve even the city areas properly, and he attributed their defects to what he considered inadequate support by municipal authorities. He reported that there were no services in the suburban areas and that there were neither branch libraries nor traveling libraries. Subscription financing was in any case obsolescent, he believed, and he advocated free, rate-supported services (*26*).

Twenty years later the Greenfield Commission reported that the Bulawayo Pub-

lic Library and two suburban libraries operated in the municipal area of that city, and that Greater Salisbury was served by the Queen Victoria Memorial Library with three branch libraries. In its view, these libraries met a reasonable standard. But in 1970 they were the only public and subscription libraries in Rhodesia with qualified staff. Again, there was reference to the problems of financing and to the inadequacy of the municipal grants; again, a comparison was made between the libraries of Bulawayo and Salisbury and those of certain South African municipalities—again to the considerable disadvantage of the former (*27*). By 1974 the Bulawayo Public Library had a stock of 55,000 books, its issues were 170,000 per annum, and it was operating a country postal service (*28*). At the end of 1976, the Queen Victoria Memorial Library, Salisbury, had a stock of 60,000 books in its main library and 60,000 books in its six branch libraries. The main library and the branches were housed in new and specially designed buildings; together they issued nearly 830,000 books during the year. Both the Bulawayo and Salisbury libraries were operating children's services with considerable success; both were providing reference services that were used extensively by students; both offered services to country members. The Salisbury library was planning a seventh branch, for senior citizens (*29*).

Concerning the situation in the smaller centers, Varley's principal interest was once more the inadequacy of financial provision. He described club libraries and the way in which they had developed as the result of community effort in the smaller centers of European settlement and in the farming areas. There were public subscription libraries in several towns. The size of their stocks and the range of their membership varied greatly; populations served by these libraries varied from 200 or 300 to 2,500. Some of the more prosperous towns had acquired quite large collections and even operated children's libraries. He cited one such library at Gwelo, which he found to possess over 10,000 volumes. Among the other towns, he cited only Umtali and its Turner Memorial Library, whose bookstock was then 15,000 and membership, 640 (*30*).

The Greenfield Commission examined these libraries and saw that they varied according to town and community, and that throughout they fell far short of present-day requirements. The commission referred to the inadequacy of reference stocks and to the depressing fact that many of these libraries—relying largely on subscriptions for their support—could not meet their operating and maintenance costs. Most were involved in a struggle for survival, and few had full-time staff. The commission also referred to the crisis presented by rising book prices. Although many of the libraries were not supported entirely by subscription (some also received annual grants from the central and local government), subscriptions represented the largest element of their incomes, and the grants were considered far too small to be effective. The commission noted with concern a degree of apathy on the part of the local authorities concerning public libraries; it observed that, while they recognized the recreational needs that were fulfilled by public libraries, they appeared to lack an awareness of their more vital functions.

The commission considered the isolation of the small public libraries to be their

major defect and therefore recommended a coordinated library service, although it recognized the difficulties of persuading local authorities to relinquish control over their services. The commission also stressed the need for reorientation of outlook among library authorities (*27*).

Despite the generally unsatisfactory position reported by the commission, there have been developments in the small public library sector since 1971; for example, the Turner Memorial Library acquired a new building in 1971. It has an area of 6,500 square feet and includes reference, children's, and periodicals departments. It was built to standards recommended by the South African Library Association for a town with the population of Umtali (*31*). The township of Beatrice acquired a new library in 1976. The collection there consisted of 1,500 volumes, and both the new building and the work of establishing the collection represented the success of the efforts of a very small agricultural community. Indeed, when opening the building, the Minister of Health and of Labour and Social Welfare paid tribute to the farming community both for its work in achieving the new library and because the library was evidence of its wider cultural and intellectual interests (*32*).

The general recommendation of the Greenfield Commission was that a national public library service be established and that it should incorporate these small and scattered public libraries—indeed, all public libraries outside Bulawayo and Salisbury. Consultative and advisory services and a coordinated administrative structure were deemed necessary, and the continued interest and participation of the local communities in library policy and administration was considered to be very important. Progress toward a national public library scheme, it was considered, could therefore be achieved only by gradually developing a cooperative and regionalized structure.

Africans, it was observed in the Greenfield Commission *Report*, were not excluded from any of the subscription libraries. Nevertheless, library services to Africans were very inadequate.

In very large parts of rural Rhodesia the population is predominately African. The industrial working-class suburbs are almost entirely African. The urban library services are much better than the rural, primarily because of the tendency for the educated to flow into the urban areas and for literacy to be developed more rapidly in urban areas. Literacy is a factor of some importance in the assessment of library services, and it is estimated that in Rhodesia the number of literate Africans is now about 1,500,000 (taking full literacy to have been reached after a Standard 6 education). This figure appears to represent a higher proportion of the total population than the average for the continent as a whole (*33*).

At the time of the Varley Report, library services to Africans throughout the country were rudimentary. The two main concentrations of industrial population, Bulawayo and Salisbury, enjoyed only limited library provision. In Bulawayo an attempt had been made to establish a reference library, but it had been regarded as a secondary activity of the Municipal Welfare Office. By 1970 the situation in that city was very much better: the Greenfield Commission reported that lending and reference libraries and facilities for children had been established by the municipal-

ity in three African townships, in modern buildings, and that the service was administered from a central point under the direction of qualified librarians. This was the most advanced library facility available to Africans in Rhodesia at that time (*34*). The commission also noted that the reading interest of the membership of these libraries had developed beyond the usual demand for educational material. The service in Bulawayo had come into existence in 1958; by 1972 it had a bookstock of 30,000 volumes and a staff of 14; there was a membership of 6,000 and issues for the preceding year had reached 140,000. These figures demonstrate the extent of the demand among Africans for a free public library. A children's library was added in one of the branches in 1972 to increase facilities for young people; two further branches were added after that date. These African townships cover very large areas and the branch library system is one of the best methods of reaching the different communities. Readership consists of factory, shop, and office workers; and businessmen, professional men, teachers, police, and nurses. Interestingly, women members have been few in number, although there appears to be evidence of a gradual change in this situation. Most of the books held by the libraries were in English, for there were available at the end of 1974 only a small number of publications in the local vernacular languages. However, books in English with an African background were reported to be in particularly high demand (*35*,*36*).

African library services in the Salisbury area were much slower to advance. Varley commented only on a collection of books that he discovered in a locked cupboard in a community center in Harari township (*37*). The Greenfield Commission reported that the Salisbury City Council had provided reference libraries in two of the townships and that they were part of an integrated service which was intended to embrace all African areas under the municipal administration. The service was directed by a qualified librarian. There were, in 1970, no lending facilities (*38*). Subsequently, however, a further township library was established and lending services were inaugurated. A children's library was started in 1976. The focus of the book collections in the Salisbury libraries is educational rather than general literature. Members pay a deposit, but it is not high, and the service is funded and maintained by the African Administration Department of the municipality. The main feature of the system is the reference function of each of the three libraries. The Greenfield Commission concluded that only the administrators of the African townships of Bulawayo and Salisbury were sufficiently advanced to give any guidance on the future development of public library services for Africans in urban areas. It was only in these areas that extensive experience of modern public library operation had been gained. It must be added that the library services of the Bulawayo municipality are considered to be of a high standard on the basis of internationally accepted criteria (*39*).

Outside Salisbury and Bulawayo, although there were attempts at organizing library services to Africans, there had been little development of facilities. By 1950, according to Varley, the situation was very unsatisfactory (*40*). However, he drew

attention to some of the basic problems relating to the provision of library services in this sphere, and again the major one was the standard of literacy. He pointed out that this standard had then been attained by a comparatively small proportion of the African communities in all of the three territories that he surveyed. He also referred to the need for great care in selecting suitable texts and to the need for guidance to Africans in the use of library facilities. One of his main concerns, which has been shared by all librarians in Rhodesia, was that trained African librarians should be introduced into the situation as soon as possible for this purpose. He drew attention to a library that had been established in Fort Victoria and which contained some 400 volumes in English and in the vernacular. As a pilot scheme Varley considered it a success. He referred also to libraries in missions such as those at Morgenster and St. Augustine's, and also to libraries in some of the government secondary schools such as those at Domboshawa, Mzingwane, and Goromonzi. He evaluated the library services to Africans in Rhodesia at that time as being halfhearted and lacking in direction and coordination, and he also asserted that there was no policy for development. He recommended that such services should be the responsibility of a single designated authority and that the training of suitable African librarians ought to be regarded as an urgent priority.

The Greenfield Commission, 20 years later, reviewed library services to African communities in the five municipalities other than Bulawayo. It considered all of them unsatisfactory, although noting that there had been an intention to improve some of them. With regard to other centers the commission reported that, on the basis of information provided, facilities were either entirely lacking or insignificant. There appeared to be no public library services in the tribal areas: a book-box exchange service, started in the 1950s and subsequently administered by the Rhodesia Literature Bureau, had become defunct.

The commission was concerned about this lack of facilities, particularly because one consequence was a failure to maintain among the African communities even the limited standard of literacy that had been gained. Recognizing that demands from Africans for library services would grow, it was proposed that a national public library service should extend its activities to the advancement of facilities for Africans in all towns and centers in Rhodesia other than Bulawayo and Salisbury. It was also recommended that the government should contribute to the cost of improving and developing library services for Africans generally (*34*).

An interesting experiment in library provision was attempted in a tribal trust land near Salisbury in 1973, and it is still in operation. The organization was carried out by members of the staff of the University of Rhodesia Library in cooperation with a development program set in motion by the Institute of Adult Education of the university. It was considered that the provision of a library service would be a useful adjunct to the program and that it would create a much needed literary environment. The bookstock was spread among seven or eight centers in this very large area. Again, very little was available in the vernacular; most of the material held was in English. Staffing and maintenance was carried out by members of the

community. It was considered that the service had been received with enthusiastic interest and that the library provision, however basic, represented an attempt to change the African rural areas for the better (*41*).

The main consequence of the Greenfield Commission so far has been the projection of a pilot public library scheme based on the National Free Library and covering the Matabeleland region. In view of the importance of the National Free Library to the future development of library facilities throughout Rhodesia, particularly in the public field, its history subsequent to 1951 is of significance. The Varley Report asserted that its service was limited to its own stock, apart from borrowings from South Africa, and that the recurrent book votes had been inadequate to the development of a satisfactory collection. Varley drew attention to the fact that this was in essence a student service and that it was therefore limited in coverage and could not take the place of a public library (*42*).

By the time of the Greenfield Commission 20 years later, the National Free Library had made a great deal of progress and had developed many strong features. The major part of its bookstock consisted of academic, educational, scientific, and technical monographs on a wide range of subjects, and in this it was akin to the serious nonfiction stock of a large metropolitan library. The commission described the purposes of the library as being to provide the public with direct free access to books for advanced reading and study, to serve as a national center for interloans, and to supplement the resources of public libraries. The greater part of its income was drawn from the central government. The library operated both a reference and a postal loan service. It was under the direction of qualified staff. A large section of its readership was drawn from African communities throughout the country. It was clearly fulfilling functions that would normally be expected of a public library service. The commission recommended that the National Free Library should be incorporated into a national public library service and that its bookstock should be one of the main resources of the service (*43*).

This library, originally operated from the Bulawayo Public Library, moved into a new building—the Dugald Niven Library—in 1962. (See Figure 4.) This became Rhodesia's National Lending Library and its growth has been closely related to the development of other kinds of libraries in the country. The type of material held has extended beyond the initial concept of educational subject matter at adult level; by 1970 it possessed a stock of 50,000 items and a staff of 12. In 1969 it had been established as a statutory body (*44*). Besides acting as a national center for interloans and as a bibliographic center, it operates a nationwide loan service. It maintained a Rhodesian Union Catalog of books until this was superseded by the inclusion of Rhodesian entries in the South African Union Catalog. This library and the Library of the University of Rhodesia are linked by Telex to libraries in South Africa and overseas (*45*).

In 1976 initial preparations for operating the pilot scheme proposed by the Greenfield Commission were effected by enlarging the administration wing of the Dugald Niven Library building. The pilot scheme is the precursor of a national public library service that will be formed by the voluntary affiliation of local libra-

FIGURE 4. *National Free Library of Rhodesia, Bulawayo. Courtesy of the National Free Library of Rhodesia.*

ries outside the two principal cities of Salisbury and Bulawayo, and by incorporating the National Free Library as its headquarters. The scheme, it is intended, will be state supported and free, and will provide material in all except the lightest categories of reading. It is intended to set up regional centers also in Mashonaland and Manicaland (*46*).

At the end of 1976 the board of the National Free Library was awaiting the decision on its proposals for the 1977/78 financial year before proceeding with further steps (*47*). A planning committee had been set up by that authority to examine these further steps.

LIBRARIES IN EDUCATION

In assessing the situation with regard to school libraries, Varley's main comments have been quoted above: he applauded the activities of the Beit circulation scheme and regretted the absence of coordination—for throughout their history, school libraries in Rhodesia have generally had no interlibrary relations. The criteria for school libraries that had been established in the United States and the United Kingdom, and in the Provinces of South Africa, were not applied in Rhodesia. Varley found that the condition of stocks varied greatly from school to school and observed that there was a general lack of good reference books. There was no coordinated system of book selection and no qualified staff. He also noted that there appeared to be very little effort to relate school libraries to curricula. He recommended that the government should give increased grants to schools for library purposes and that a model school library should be established; also that there

should be a greater degree of guidance in book selection and that there should be training courses for school librarians (school librarians were teachers acting in an extramural capacity) (*48*).

Twenty years later the situation was not significantly better. Primary schools were found to have classroom collections and high schools generally had school libraries, but government grants for their support were very inadequate (*49*). Part-time library clerks had been appointed to many of the high schools.

The Beit Circulating Library had been discontinued. According to Dellar, this service (which had been in the hands of the Ministry of Education) gradually declined (*50*). The Beit Trustees continued, however, to make grants for the construction of libraries in educational institutions, and it was reported by the Greenfield Commission that five such grants had been made for buildings between 1968 and 1970, the beneficiaries being the Tegwane Secondary School, the Rhodesian Academy of Music, Ranche House College, Marist Brothers College, and the United College of Education.

The commission believed that there had been some modest improvements in individual school libraries, although it noted that there had been no progress toward the recognition of the proper functions of the teacher-librarian. The Greenfield Commission also expressed the view that a central and coordinating guidance for school libraries was clearly necessary and recommended that, to achieve this, a qualified librarian should be appointed by the Ministry of Education. The view was that his function would extend to advising on library services in teacher training colleges, in technical colleges, and in African schools. The commission also favored setting up a school library service similar to the one in the Transvaal.

As of 1970 African schools were still inadequately equipped with libraries. A good deal was being done at the classroom level to provide curriculum enrichment by means of reading, but libraries had not generally been developed satisfactorily. No staffing was available for school libraries apart from that provided by the extramural activities of teachers, and there was a general lack of suitable library accommodations.

The need for awareness on the part of teachers of the important function of the school library in education was the subject for several years of a special elective course taught at the University of Rhodesia, which was offered to postgraduate students. The course included a survey of school library systems in other parts of the world and aspects of administrative policy. It was concluded each year by a study of a proposed system of school libraries within a coordinated service to cover the whole of Rhodesia. Up to the end of 1976 there was no evidence that these proposals would have been accepted by the Ministry of Education (*51*).

It would not be true, however, to state that there is still a complete lack of coordination of school library activities. On several occasions short training courses were mounted by the Library of the University of Rhodesia for the benefit of teacher-librarians. These courses included elements of practical administration and operation. Moreover, in 1976 the School Libraries Section of the Rhodesia Library Association came into existence, and its function was to bring together those in-

volved in the operation of school libraries throughout the country. It publishes a bulletin entitled *Arrakis* at frequent intervals, and this represents an attempt to advise school librarians on procedures and book selection. It includes articles on the principles of school librarianship. Many of the contributors are professional librarians employed in the major libraries. It is likely that this sectional interest will form itself into a cohesive and coherent body of teachers concerned about school libraries. The probable result will be an improvement in school library administration; indeed, the effects of the regular meetings of the group and its discussions on library matters, together with the notes contained in *Arrakis*, may already be seen in terms of improved methods.

Other libraries that relate to school libraries, and which might be seen in terms of a future coordinated school library system, are those that are at present administered separately and in isolation by the training colleges in the Ministry of Education, by the independent training colleges, and by technical colleges. Several of these establishments acquired new buildings between 1950 and 1970—among them, the Bulawayo Teacher Training College and the United College of Education, also in Bulawayo.

Varley commented on an earlier report on technical libraries. This was the *Report of the Select Committee on Technical Education in Southern Africa, 1950*. From it, he quoted:

> . . . technical reference libraries are very meagre indeed and generally out of date. There is a technical section in the National Library at Bulawayo, but it does not meet the needs of the students of the Salisbury Polytechnic (*52*).

Varley stated that this criticism was fully justified and considered that both the Bulawayo and Salisbury Polytechnics were seriously lacking in the texts essential to the training of artisans, and that accommodation was in both cases makeshift and quite inadequate.

The *Report* of the Greenfield Commission stated that the commission was favorably impressed with the standard of library services at these institutions. In the intervening years the Bulawayo Technical College had built a well-sited library, and both the Salisbury and Bulawayo Colleges had appointed qualified librarians. The commission was of the opinion that these libraries might fall within an educational library system (*53*).

By 1975 there had been some development in such establishments. There were eight institutions, within the Ministry of Education, with libraries. These were the Alvord Training Centre (Fort Victoria), the Bulawayo Teachers' College, the Bulawayo Technical College, the Domboshawa Training Centre, the Gwelo Teachers' College, the Kayisa Training Centre, the Salisbury Polytechnic, and the Umtali Teachers' College. By 1975 the largest of these was the Bulawayo Teachers' College, with 28,000 books and 90 current periodicals. The Bulawayo Technical College had 9,500 books and received 75 current periodicals; the Gwelo Teachers' College had 15,500 books and received 50 current periodicals; the Salisbury Poly-

technic had 12,000 books and received 98 current periodicals. Both the Bulawayo and Salisbury Polytechnics were directed by qualified librarians.

Development in training college libraries has varied considerably. For example, by 1976 the bookstock of the Umtali College Library appeared to require a revision and expansion, and the same was believed to be the case for Mkoba College. By 1977 improvements were under way in both libraries and there were plans for new accommodations in some of these colleges. The level of staffing varied; not all of the libraries had appointed qualified personnel (*54*).

The Library of the University of Rhodesia was established in 1957 and moved into a new building in 1960. (See Figure 5.) This is by far the largest library in the country. In Varley's Report of 1951 there is expressed a statement of the need for a reference library, which he envisaged as a center for bibliographic research and information retrieval, particularly in science; these were facilities that Salisbury had lacked. The bibliographic and information retrieval services of the University Library support research both at the university and in the country at large.

The library's bookstocks, which at the end of 1976 included 270,000 volumes, were acquired largely in accordance with the needs of teaching and research of the six faculties, namely, Engineering, Medicine, Science, Arts, Education, and Social Studies. Extensive acquisitions programs outside these specific areas have, however, been in progress for some time.

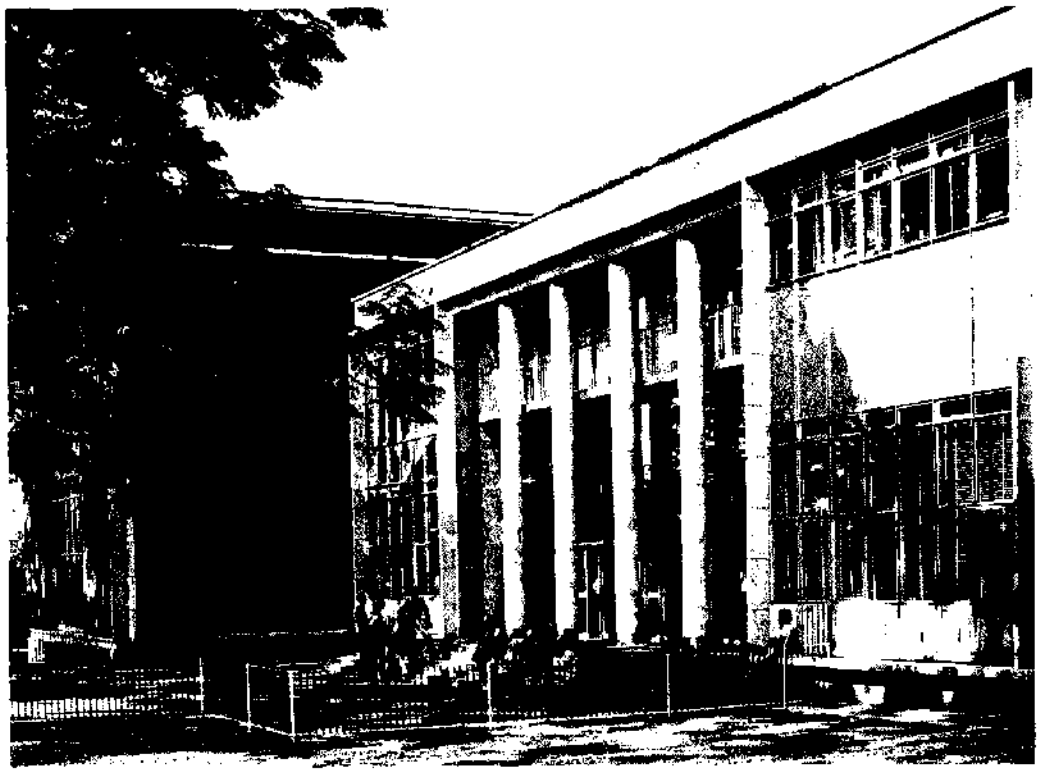

FIGURE 5. *University Library, Salisbury. From the University of Rhodesia Library collection.*

The system includes a Main Library and four branches. The Medical Library, which moved early in 1978 to new quarters in the new Teaching Hospital, contains 30,000 volumes and receives 822 periodicals currently. This library was inaugurated in 1963, taking over as its nucleus the collection of the library of the *Central African Journal of Medicine,* which had existed for 10 years prior to that date. Of its periodicals, 150 are acquired by means of exchange agreements initiated on behalf of the *Central African Journal of Medicine.* This is the most advanced and modern medical library in the region, and its resources in tropical medicine are extensive. The branch is the center of a medical information network that extends throughout Rhodesia and beyond.

The Law Library, established in 1965, contains the Law Reports of the South African Provinces, of the United Kingdom, of neighboring African countries, and of other English-speaking countries. There is a large selection of law texts and monographs. To some extent it has incorporated certain much older collections, although its nucleus was substantially material accumulated by the university. Two major concentrations of material relate to English and Roman–Dutch law. The collections include 12,500 volumes; 171 periodicals are received currently. Its facilities and services are available to the legal profession and for research throughout the country.

The Education Library, established in 1967, was formed from a library that had belonged to the Faculty of Education from the time of the founding of the university. It contains a stock of 8,600 volumes, mainly intended as classroom material for students involved in practical teaching.

The Map Library, inaugurated in 1968, contains 8,000 sheet maps and operates a reference and information retrieval service available to the various departments of the university and to the country as a whole. The maps are not limited in coverage to Rhodesia. The acquisitions policy of this branch includes obtaining geographical, topographical, geological, and ethnological publications available from the official cartographic publishing bodies of the countries in all continents.

A small satellite of the Medical Library—equipped with textbooks and monographs relevant to teaching and study—was placed in the Harari Hospital in 1968 and has grown since then. This study collection is used by the staff and students involved in practical work at the hospital, which is one of the teaching institutions of the university's Faculty of Medicine.

The Main Library possesses an extensive collection of bibliographic material, and of indexing and abstracting services. The periodicals collection includes more than 4,000 currently received titles, of which the main strength is science and technology although all the other subjects relevant to university activities are represented.

There are two main reading rooms representing, respectively, the Science Division and the Humanities Division and three smaller reading rooms, one of which is attached to the Government Publications Section. (See Figure 6.) The library receives current government publications from many parts of Africa, from the United Kingdom, and from other Commonwealth countries. The stackrooms, which contain the major part of the collections of the Main Library, are adjacent to the main

FIGURE 6. *Section of a reading room in the University Library, Salisbury. From the University of Rhodesia Library collection.*

reading rooms and are administered on the open access principle. There are no independent institute or faculty libraries in the university.

The staff of the system includes 18 qualified librarians, although this number varies according to recruitment. Many of them are subject librarians and fulfill specialist functions in the Main Library and in the branches where reference and information retrieval, current awareness, and selective dissemination of information services are operated in addition to the facilities that are offered to students and staff for teaching and study. The library is extensively used by students and the present membership in this category is 2,000. The rate of loan is heavy for a university of this size: 100,000 books were issued to students in the course of 1976. A great deal of use is made of the library for consultation purposes, and it is estimated that the number of visits is at least four times the loan figure.

Special collections include the Doke Collection of African Languages, the Godlonton Collection of Rhodesiana, and the Astor Collection of Confederate Material on the Civil War.

The library includes a modern bindery and a fully equipped photographic and printing department, the latter possessing microfilm and microfiche apparatus. There are photocopying facilities throughout the main building and the branches, in addition to other types of audiovisual and microreading terminals.

The reading rooms of the Main Library accommodate over 400 readers; its stack capacity is 350,000. The branch libraries together accommodate over 300 readers.

Much attention has been given recently to the installation of audiovisual facilities, particularly in the new Medical Library, where a series of carrels has been con-

structed with several types of terminals available for individual study and research. The Medical Library is in this context a precursor of developments in the Main Library, where various experiments are being made with the most effective types of audiovisual equipment and media. Audiovisual operations have also been carried out in the Law and Education branch libraries in conjunction with the activities of the teaching departments (*55, 56*).

SPECIAL LIBRARIES

The Library of the National Archives, Salisbury, is the nation's main repository for material on Rhodesia and holds the finest collection of Rhodesiana in existence. (See Figure 7.) It has very detailed catalogs to assist research workers in the in-depth retrieval of its extensive resources. It contained, at the end of 1976, 80,000 volumes, 2,000 sheet maps, and large collections of microfilms and microfiche. It possesses 20,000 photographs relating to Rhodesian history and receives over 1,000 periodicals, including a very large number of newspapers. This is a deposit library, which acquires by statute a copy of every publication issued in the country.

The library was formed in 1935, and its acquisitions policy covers works relating to Rhodesia, to neighboring countries, and to Rhodesian interests generally. It is, as its name implies, a constituent of the National Archives of Rhodesia. In 1961 the archives and its library moved into the present building, very modern in conception and designed to meet the harsh conditions of the Rhodesian climate.

There are in this library comprehensive sets of Rhodesian government publications, and also those of the government publications of many neighboring territories and of Commonwealth countries. The library has acquired several special collections in the course of its history, including the Ashworth Collection of missionary

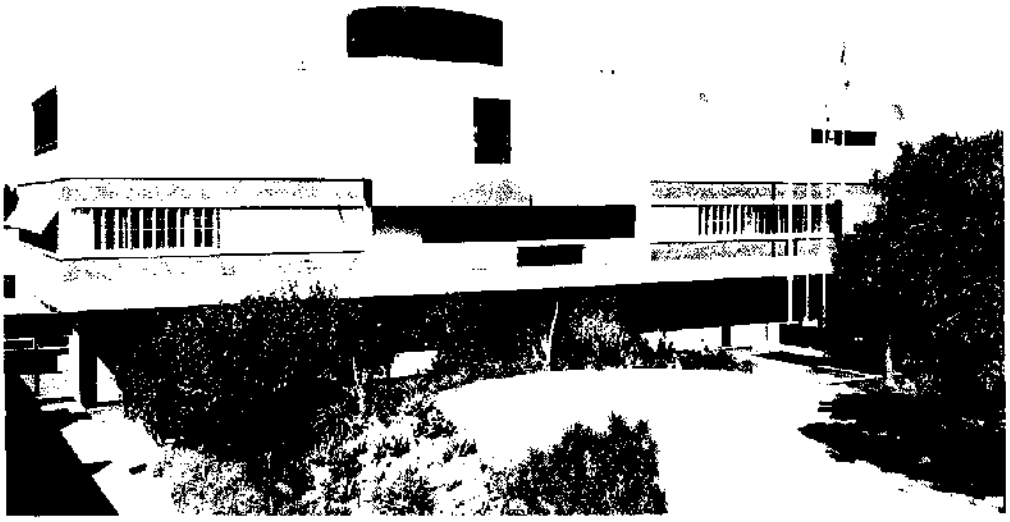

FIGURE 7. *National Archives, Salisbury. Courtesy of the National Archives of Rhodesia.*

books, the Cripps Collection of Africana, and the Cripwell Collection of Africana. The library has grown considerably since 1947, at which time it possessed some 14,500 volumes.

In accordance with its policy of focusing on bibliographical research, the library is a repository, and its collections are not available for loan. However, it has well-equipped photographic facilities, and photocopies of documents and other source materials can be easily obtained. Very heavy use is made of its research facilities by historians, sociologists, political scientists, and by those who are concerned with Rhodesia as a regional and historical concept.

There are audiovisual resources and services; the library's collections include cine-films, phono-disks, tape-recordings, and transparencies, and the reading rooms are equipped with sound-proofed research cubicles for using this material.

Several Rhodesian bibliographical projects have been initiated at the National Archives Library, including the *Rhodesia National Bibliography*. The library administers the international standard book-numbering scheme for publications appearing in Rhodesia. It is in several respects, therefore, a state or national library. The staff includes seven qualified librarians, who are specialists in the service and activities in which the library is involved (*57,58*).

The National Archives is also the administrative center of the Government Library Service. The desirability of coordinating the libraries that existed in government departments was referred to by the Greenfield Commission. In 1972 the post of senior government librarian was established with responsibilities to the director of the National Archives for advising the various government ministries on all matters relating to the maintenance of an efficient library service; for organizing training courses for library staff; for advising the Public Services Board and ministries on the selection, placement, and promotion of librarians; for establishing and maintaining the master or union catalog of the government libraries; for coordinating acquisitions; and for maintaining various central services. All this, it was intended, should be achieved without affecting the autonomy of the ministries in the management of their libraries.

Subsequently, professional gradings were calibrated and courses leading to government qualifying examinations were mounted. One of the main functions of the senior government librarian was that of liaison between government departments to examine existing systems and to plan for development. A move was made also in the direction of centralized storage; in 1974 a repository for little-used material was found to be one of the more valuable services offered by the Government Library Service. Another feature of cooperation effected by this service was the institution of an interloan system among libraries in government departments (*59*).

The Library of Parliament falls directly within the administration of the Parliament of Rhodesia. In 1949 a trained librarian was appointed, and it is from that date that the modern history of the system may be traced. The library now contains 45,000 volumes with an emphasis on social sciences, particularly on politics, economics, law, administration, social services, history, and biography. There is also a collection of about the same number of volumes of government publications in-

cluding debates, statutes, subsidiary legislation, and reports, from Commonwealth countries, South Africa, and the United States. The library contains a large Rhodesiana collection. Over 200 periodicals in the fields of politics, economics, administration, and current affairs are received, in addition to newspapers issued in Rhodesia, South Africa, and the United Kingdom. The collections are cataloged and there is an analytical record of items taken from the Rhodesian press.

The library's primary responsibility is the provision of a reference and information service to senators and to members and officers of Parliament. Its facilities are also available to members of the public service and to staff and students of the University of Rhodesia. Its resources are heavily used; it is the center for bibliographical research projects on government documents.

Generally, the library stock is not available for loan outside the Salisbury area. The policy and management of the library are vested in a Joint Committee of Senators and Members of Parliament under the chairmanship of the Speaker. The librarian is responsible to this committee and acts as its secretary. The library is accommodated in two parts of the Parliament Building, and the staff includes two qualified librarians (*60*).

Among library resources in natural science, in relation to Rhodesia, is a new service that covers the museums of the country. The National Museums and Monuments Organization is a statutory body that includes an administrative division in Salisbury with responsibilities for five establishments. These are: the National Museum, Bulawayo; Queen Victoria Museum, Salisbury; the Umtali Museum; the Great Zimbabwe Ruins National Monument; and the Midlands Museum, Gwelo.

The Queen Victoria Memorial Library and Museum was separated into two elements in 1951 when the museum was taken over by the nation and placed under the jurisdiction of the National Museums Board. (See Figure 8.) In 1959 the Umtali Museum came under the board's control, and in 1972 the National Museums Board and the Commission for the Preservation of Natural and Historical Monuments and Relics were amalgamated. This amalgamation also resulted in the organization's taking control of the Zimbabwe Ruins. The Bulawayo Museum dates from the turn of the century and had its first curator in 1901. The Midlands Museum became part of the organization in July 1974.

The policy of the National Museums is to collect and store objects of scientific, cultural, and educational value; to carry out research in connection with the museum collections; and to aid educational services. The organization employs research officers, whose work is often directed toward publication. There are in addition education officers and a team of display artists. The Library Service of the organization has among its main functions the fulfillment of demands made by these specialist groups.

Prior to 1976 each museum operated its own library in isolation; all the units had separate policies and the libraries grew haphazardly; there was little cooperation or coordination among them. In 1976, in order to bring the administration of the libraries under a unitary system that would effect greater efficiency in bibliographic control and improve the utilization of these resources, a centralized library

FIGURE 8. *Queen Victoria Memorial Library, Salisbury. From the University of Rhodesia Library collection.*

service was established under a professional librarian based in Salisbury. Union catalogs and periodicals records are now being compiled and standardized catalogs will be installed in each museum. A unified policy of acquisition has been adopted and regular bulletins of acquisitions will be issued. It was reported at the end of 1976 that many of the smaller departmental collections within each museum had been incorporated. All material acquired is processed by the senior librarian and her staff at the Central Administration office.

The present stocks of the constituent libraries amount to 7,000 books, 810 current periodicals, and 4,000 maps. There is also a large collection of pamphlets and reprints. Library facilities are available to staff members of the organization and to other research workers. The main concentration of the stock is in natural and human sciences including ornithology, mammology, entomology, ethnology—much of this having a Rhodesian context. The new administration operates reference and information retrieval and current awareness services, and offers photocopying facilities.

Four publications are produced by the National Museums and Monuments Organization, which, being available for exchange, provide the means whereby a good deal of the present resources of the network are acquired. The publications are: *Arnoldia Rhodesia, Occasional Papers, Museum Memoirs,* and *Kariba Studies* (*61*).

Another specialized system is the Thomas Meikle Library of the National Gallery of Rhodesia. The present gallery in Salisbury was erected in 1957; it includes library accommodations. (See Figure 9.) The initial development of the stock was

FIGURE 9. *National Gallery, Salisbury.*

made possible by donations in the form of money and books, but in the early 1960s the library began to acquire items by purchase and also to subscribe to a number of periodicals.

As early as 1948 it was considered essential to have a full-time librarian, but it was not until 1974 that the post was created, and a tutor-librarian was appointed with qualifications in the teaching of art at a postgraduate level. The reorganization of the collection in accordance with standard principles of bibliographic control, information retrieval, and reader services was then undertaken. This reorganization took place in 1974 and 1975 with the assistance of members of the staff of the University Library. A small collection in the Bulawayo Gallery was classified according to the Salisbury Library policies and operations, and a union catalog of both libraries was introduced. The Salisbury collection includes 3,000 books and 600 pamphlets; at the end of 1976, 23 current periodicals were being received. The Bulawayo branch includes 600 books and 4 current periodicals (62).

Audiovisual services are a feature of the Library of the National Gallery and of many other libraries in Rhodesia, including the university and its branches, the National Archives, and the Museum Library Service. These facilities are the subject of current analysis and evaluation in Rhodesia, and the next decade should see their introduction on an increasing scale. School libraries, which are the centers of media services in many countries, do not have this function in Rhodesia, but there is an Audio-Visual Services Division in the Ministry of Education with centers in

Salisbury and Bulawayo, both of which have libraries of films, film-strips, taped lessons, and other materials. The two libraries issued 60,000 items in 1975; their facilities and services are available to schools and teachers' colleges throughout the country. A new building for the Salisbury Audio-Visual Centre is under construction and will be ready for occupation in the near future (*63*).

Many of the teaching departments of the university have maintained audiovisual services as an adjunct to teaching, and because of the increasing cost and proliferation of such media, the University Library and its branches will coordinate their acquisition, storage, and retrieval in the future. The library will thus extend its audiovisual operations into professional activities outside the university.

The position of industrial special libraries in Rhodesia is one of latent development. A number of the larger companies and corporations and nationalized industries operate special libraries with the primary function of providing retrieval. The systems in use and the standards of service vary widely. In 1973 the librarian of the university published a series of recommendations relevant to the engineering industry in an article in which the principal policies, operations, and procedures of library work were described. Some companies subsequently established or reorganized their libraries in varying degrees of accordance with these recommendations (*64*). There is a Patent Office Library in Salisbury that has relevance to industrial research and development.

There are several information services available in the country to assist industry. They include the Small Industries Advisory Service (*65*); the South African Water Information Centre (*66*); the Current Awareness Service of the South African Council for Scientific and Industrial Research (*67*); and the South African Dissemination of Information Service (SASDI) (*68*), which operates with a computer data base covering biology, chemistry, engineering, and other fields of pure and applied science. Information services are also maintained by the libraries of the Rhodesian Institute of Management and the Institute of Business, in Salisbury.

The government scientific liaison officer has a wide-ranging function that includes the monitoring of information services in science and technology. His department includes a qualified librarian among whose responsibilities is the coordination and annotation of the Rhodesian entries in the union catalog of periodicals (PISAL) issued in Pretoria. The government scientific liaison officer has analyzed and described organizations and resources in scientific research and technical services in Rhodesia, and has produced a directory of these (*69*). Another of his achievements, in which he has been assisted by the University Library, is the compilation and publication of the annual *Rhodesia Research Index*, which lists projects in progress throughout the country, giving details of publications that have appeared in consequence of the projects (*70*).

It should be added that many government departments operate information services; one of these is the Department of Research and Specialist Services of the Ministry of Agriculture. There is also the Central Library of the Ministry of Agriculture, which incorporates the library and information service of the former Agricultural Research Council of Rhodesia. Details of many of these government

resources are given in the *Directory of Rhodesian Libraries* and in the *Directory of Organizations.*

Professional and Administrative Factors

LEGISLATION

Rhodesian legislation relating to libraries is not extensive. The Printed Publications Act, No. 12 of 1975, designates three libraries as legal deposit libraries, namely, the National Archives Library, the Bulawayo Public Library, and the Queen Victoria Memorial Library. The Queen Victoria Memorial Library Act (Chapter 335) established a Board of Trustees for the control and management of that library. The act sets out the powers of the board. The National Free Library of Rhodesia Act (Chapter 311) provides for the establishment and incorporation of the National Free Library of Rhodesia and the establishment of a board to manage and control the affairs of the library. The act lists the functions of the library. The National Archives of Rhodesia Act (Chapter 309) sets out the policy and function of the department, which allows for the inclusion of a library service.

The Urban Councils Act (Chapter 214) provides that a council shall have power to provide and operate public libraries and to make bylaws. The Rural Councils Act (Chapter 211) authorizes such councils to establish and maintain public libraries.

Other statutes affecting libraries include the Copyright Act (Chapter 200), which has special provisions relating to libraries and a section referring to photocopying. The Censorship and Entertainments Control Act (Chapter 78) contains sections that relate to libraries, including the importation, display, and holding of publications; and also exemptions from sections of the act. Regulations governing appeals are set out in Rhodesia Government Notice, No. 907 of 1967 (*71*).

STATUS AND TRAINING OF LIBRARIANS

It has not been considered necessary to establish in Rhodesia a school offering courses leading to full professional or postgraduate qualification. The number of vacancies occurring each year has hitherto not appeared to justify such an institution; an investigation into the type of training available in other countries was made by the university librarian in 1969 (*72*).

In most Rhodesian administrations that employ postgraduate librarians or librarians with equivalent qualifications, the incumbents are accorded professional status. Up to the end of 1976 there had been in general an adequate intake of qualified staff into those library authorities that had offered appropriate professional gradings. Most of the personnel were Rhodesians who had attended university courses in the United Kingdom or South Africa; a few had received their qualifications in the United States or in a continental country. Staff with both intermediate

and postgraduate qualifications have been appointed to Rhodesian library systems. Some libraries have accepted graduates without library qualifications, who have subsequently gained their professional certification through correspondence courses offered by the University of South Africa. Many library systems have junior staff who possess neither degrees nor professional diplomas.

Several types of more basic tuition have been introduced, all of which still existed at the end of 1976. They include courses offered by the senior government librarian, by the Polytechnics of Salisbury and Bulawayo, and by the Ranche House College, Salisbury; and also orientation seminars given in the University Library. Only the Polytechnic courses lead to a qualification, namely, the City and Guilds (UK) Certificate.

There has for many years been a professional society in Rhodesia. The first was the Central Africa Branch of the South African Library Association, which came into being in 1947. Prior to that time the association had for 5 years co-opted a senior Rhodesian librarian to its Administrative Council to represent Rhodesian interests. In 1947 the branch had 22 members. The first association terminated its activities in 1955 and was subsequently dissolved (*73*).

In 1961 the *Newsletter of the Library Association of Rhodesia and Nyasaland* announced the objects of a new association that sought to unite the interests of all persons engaged in the provision of library services (*74*). The editorial stated that there had been a sad lack of contact among libraries and librarians in the scattered centers of the territories of the Federation of Rhodesia and Nyasaland, and it expressed the hope that the association would stimulate an awareness among central and local government bodies concerning their responsibilities for providing library facilities. The association also wished to promote whatever might tend to the improvement of professional practice, qualification, and status of librarians. In 1964 the name of the society was changed to the Library Association of Central Africa (*75*). It still, then, included members drawn from libraries in what are now Zambia and Malawi. In 1967, after the withdrawal of the Zambia branch from the association, it became the Rhodesia Library Association with objects similar to those set out for the Library Association of Rhodesia and Nyasaland (*76*). The association now has two branches, Mashonaland and Matabeleland, and is investigating the possibility of establishing a third. One specialist interest, the School Libraries Section, was inaugurated in 1976. The membership of the association has varied, but it includes all the present professional qualified librarians of Rhodesia, many of the subprofessional and junior librarians, and persons who are interested in libraries. It has a large institutional membership, among which are the representatives of numerous school libraries.

Conclusion

In the past 25 years, as in the early period of the history of Rhodesian libraries, special libraries that compare well with those of other countries have come into

existence, have grown, or have developed. There have been advances in public library provision, particularly in the main centers and in the industrial suburbs, and it is expected that such advances will be accelerated as the result of new initiatives. Bookstocks and services, despite increasing costs, are expected to improve significantly because the demands for such facilities are being clearly expressed and emphasized.

ACKNOWLEDGMENT

In compiling this summary of the history, present state, and prospects of libraries in Rhodesia, the author acknowledges that much detail has been omitted, but hopes that a view of the main trends and features of the subject may be gained from it. He also wishes to express his grateful thanks and regard to the many members of the profession, including the directors of the various services, for providing information and illustrations for this contribution to the encyclopedia.

REFERENCES

For a general reference source, see "Librarianship in the Central African Federation," special issue of *Lib. World*, **64**, 92–111 (1962).

1. Rhodesia, Office of the Prime Minister, *Directory of Organizations Concerned with Scientific and Technical Research in Rhodesia*, Government Printer, Salisbury, 1975, p. v.
2. *Encyclopaedia Rhodesia*, College Press, Salisbury, 1973, passim.
3. C. Coggin, "Rhodesia's National Reference Library," *South African Lib.*, **40**, 258–263 (1973).
4. University of Rhodesia, Library, *Catalogue of the Godlonton Collection of Rhodesiana*, The University, Salisbury, 1972; with supplements.
5. University of Rhodesia, Library, *Catalogue of the C. M. Doke Collection on African Languages*, G. K. Hall, Boston, 1972.
6. J. Pichanik, comp., *Rhodesian Literature in English: A Bibliography 1890–1973*, Mambo Press, Salisbury, in preparation.
7. E. E. Burke, "The Salisbury Public Library: A Sideline in Rhodesian Library History," *Rhodesian Librarian*, **1**, 99–103 (1969).
8. Bulawayo Public Library, *Triennial Report*, 1974, pp. 21–28.
9. G. Dellar, "Dugald Niven," *Library Assoc. Central Africa, Newsletter*, **6**, 30–37 (1966).
10. G. Dellar, "The Library of Parliament," 1976, typescript in the University of Rhodesia Library.
11. J. Lashbrook, "A New Library Service," 1976, typescript in the University of Rhodesia Library.
12. G. Fortune, "Shona Literature," *Library Assoc. Central Africa, Newsletter*, **4**, 93–99 (1964); and **5**, 4–7 (1965).
13. D. M. Malcolm, "An Outline of Zulu Literature," *Theoria*, No. 5, 1953, pp. 44–54.
14. M. B. Cuthbertson, "The Value of a Library Service to the Community," *Rhodesia Scientific Assoc., Proceedings and Transactions*, **42**, 27–37 (1949).
15. Rhodesia Scientific Association, Annual General Meeting, 1949, *Rhodesia Scientific Assoc., Proceedings and Transactions*, **42**, 3–4 (1949).
16. D. H. Varley, "Library Services in the Rhodesias and Nyasaland: Report on Existing Facilities and Recommendations on Future Developments," Cape Town, 1951, typescript in the Godlonton Collection, University of Rhodesia Library, p. 19.
17. Rhodesia Scientific Association, Annual General Meeting, 1951, *Rhodesia Scientific Assoc., Proceedings and Transactions*, **43**, xvi (1951).

18. W. H. Milton, quoted in the Report of the Ordinary Meeting, June 5, 1901, *Rhodesia Scientific Assoc., Proceedings and Transactions*, **2**, 47 (1901).

19. Rhodesia Scientific Association, Annual General Meetings, *Rhodesia Scientific Assoc., Proceedings and Transactions*, **37–42** (1939–1949).

20. Varley, "Report," Ref. *16*, p. 1.

21. C. Greenfield, chairman; Rhodesia, Library Commission, *Report*, Government Printer, Salisbury, 1971, p. 1.

22. Rhodesia Library Association, "Evidence Submitted to the Commission of Inquiry into Library Services in Rhodesia, 1970," *Rhodesian Librarian*, Supplement (1970).

23. H. M. Robinson, "The Commission of Inquiry into Library Services," *Rhodesian Librarian*, **3**, 57–64 (1971).

24. "Libraries Discussed in Parliament Again," *Rhodesian Librarian*, **4**, 76–80 (1972).

25. "Greenfield in Parliament Again," *Rhodesian Librarian*, **7**, 84 (1975).

26. Varley, "Report," Ref. *16*, pp. 41–45.

27. Greenfield, *Report*, Ref. *21*, Chap. 4.

28. D. Hartridge and T. Robarts, *Directory of Rhodesian Libraries*, National Archives, Salisbury, 1975.

29. Varley, "Report," Ref. *16*, pp. 41–45; Greenfield, *Report*, Ref. *21*, Chap. 4; and Bulawayo Public Library, *Triennial Report*, 1974.

30. Varley, "Report," Ref. *16*, pp. 35–40.

31. "Turner Memorial Library Moves into New Premises," *Rhodesian Librarian*, **3**, 90–92 (1971).

32. "New Library for Beatrice," "Turner Memorial Library Concern," *Rhodesian Librarian*, **8**, 8–10 (1976).

33. "Public Library Service to Africans," *Rhodesian Librarian*, Suppl., 56–61 (1970).

34. Greenfield, *Report*, Ref. *21*, Chap. 5.

35. K. V. Jessen, "Aspects of Library Provision in African Townships," *Rhodesian Librarian*, **5**, 24–32 (1973).

36. J. Russell, "Some Aspects of Library Provision in African Townships: The Bulawayo Township Libraries," *Rhodesian Librarian*, **5**, 33–41 (1973).

37. Varley, "Report," Ref. *16*, pp. 58–59.

38. Greenfield, *Report*, Ref. *21*, Chap. 5.

39. "New Township Libraries in Bulawayo and Salisbury," *Rhodesia Library Assoc., Newsletter*, **1**, 75–76 (1967).

40. Varley, "Report," Ref. *16*, pp. 56–58.

41. D. M. Mitchell and A. N. Scott Burden, "Libraries for Rural Development in Rhodesia . . . ," *Rhodesian Librarian*, **5**, 65–74 (1973).

42. Varley, "Report," Ref. *16*, pp. 14–15.

43. "A National Public Library Service for Rhodesia? The Library Commission's Findings," *Rhodesian Librarian*, **3**, 29–35 (1971).

44. N. Johnson, "Twenty-Five Years: The National Free Library, 1944–1969," *Rhodesian Librarian*, **2**, 2–8 (1970).

45. N. Johnson, "The National Free Library," 1976, typescript in the University of Rhodesia Library.

46. Greenfield, *Report*, Ref. *21*, pp. 48–49.

47. N. Johnson, letter to Mashonaland Branch Committee, Rhodesia Library Association, March 22, 1977.

48. Varley, "Report," Ref. *16*, pp. 26–33.

49. Greenfield, *Report*, Ref. *21*, pp. 31–33.

50. G. Dellar, Ref. *9*.

51. A. Harrison, "School Librarianship—Philosophy, Function, and Administrative Policy," 1970, typescript in the University of Rhodesia Library.

52. Varley, "Report," Ref. *16*, pp. 24–25.
53. Greenfield, *Report*, Ref. *21*, pp. 34–35.
54. D. Hartridge and T. Robarts, *Directory of Rhodesian Libraries*, Ref. *28*, pp. 10–11.
55. A. Harrison, "The Academic Library as a Measure of Civilization," *Rhodesian Librarian*, **8**, 41–54 (1976).
56. A. Harrison, "Annual Report on the Library of the University of Rhodesia, 1976," University of Rhodesia Committee Paper, in the University of Rhodesia Library.
57. J. Edwards, "National Archives of Rhodesia and Nyasaland," *Lib. World*, **62**, 53–58 (1960).
58. C. Coggin, "Rhodesia's National Reference Library," *South African Lib.*, **40**, 258–263 (1973).
59. Rhodesia, Director of National Archives, *Reports, 1972–1975*, Government Printer, Salisbury.
60. G. Dellar, "The Library of Parliament," 1976, typescript in the University of Rhodesia Library.
61. J. Lashbrook, "A New Library Service," 1976, typescript in the University of Rhodesia Library.
62. P. Wood, "The Thomas Meikle Library of the National Gallery of Rhodesia," 1976, typescript in the University of Rhodesia Library.
63. Rhodesia, *Report on Education, 1975*, Government Printer, Salisbury, 1976, pp. 18–19.
64. A. Harrison, "Libraries in Small Industries," *Rhodesian Engineer*, **11**, 88–93 (1973).
65. Small Industries Advisory Service, *Annual Report and Accounts . . . 1976*, Salisbury, 1976.
66. "South African Water Information Centre," Pretoria, 1976, pamphlet, in the University of Rhodesia Library.
67. South African Industrial Exhibition, "Current Awareness Service," Pretoria, 1976, pamphlet, in the University of Rhodesia Library.
68. "SASDI," *Rhodesian Librarian*, **8**, 58 (1976).
69. Rhodesia, Office of the Prime Minister, *Directory of Organizations Concerned with Scientific Research and Technical Services in Rhodesia*, Government Printer, Salisbury, 1975.
70. Rhodesia, Office of the Prime Minister, and University of Rhodesia Library, *Rhodesia Research Index*, 1970.
71. "Legislative Provisions Affecting Libraries," *Rhodesian Librarian*, Suppl., 43–49 (1970).
72. A. Harrison, "Academic and Professional Education in Librarianship," *Rhodesian Librarian*, **3**, 1–21 (1971).
73. E. E. Burke, "Cabsala?" *Rhodesian Librarian*, **6**, 61–66 (1974).
74. "Objects of the Library Association of Rhodesia and Nyasaland," *Library Assoc. Rhodesia and Nyasaland, Newsletter*, **1**, 2 (1961); other descriptive outlines on pp. 2–7.
75. "Salisbury Weekend Conference . . . 1964," *Library Assoc. Central Africa, Newsletter*, **4**, 25 (1964).
76. "Forward Rhodesia," *Rhodesia Library Assoc., Newsletter*, **1**, 1 (1967). A statement of the objectives of the Rhodesia Library Association accompanies this editorial article.

BIBLIOGRAPHIC SOURCES

In compiling this bibliographical essay, publications issued in Rhodesia since 1961 were covered comprehensively; items printed outside the country—either about Rhodesia or by Rhodesian residents—and items with local imprints before 1961, were not.

The *Rhodesian National Bibliography* is compiled by the National Archives, Salisbury, and includes entries for publications acquired under legal deposit. It has appeared annually since 1967, superseding the annual *List of Publications Deposited in the Library of the National Archives, 1961–1966*. There is no general coverage of Rhodesian publications issued between 1890 and 1960, but it is anticipated that present research will lead to the compilation of bibliographies that will remedy this defect.

In 1974 there appeared the directory *Current Rhodesian Periodicals*, also compiled by the National Archives. It lists 700 titles current as of June 30, 1974. The entries relate to periodicals and government publications and include a comprehensive guide to Rhodesian newspapers. It is supplemented by annual listings in the *Rhodesian National Bibliography*.

The contents of certain general Rhodesian periodicals are indexed in the *Index to South African Periodicals*, published annually by the Johannesburg Public Library. More specialized journals are covered by international indexing and abstracting services.

Archives and manuscripts in the National Archives are indexed in: T. W. Baxter, ed., *A Guide to the Public Archives of Rhodesia*, Vol. 1, 1890–1923 (National Archives of Rhodesia, Salisbury, 1969); and in: T. W. Baxter and E. E. Burke, *Guide to the Historical Manuscripts in the National Archives* (National Archives of Rhodesia, Salisbury, 1970). There is an earlier work: Rhodesia and Nyasaland, Central African Archives, *A Guide to the Public Records of Southern Rhodesia under the Regime of the British South Africa Company, 1890–1923* (Salisbury, 1956). This has been described as the most detailed description of any large group of records in Africa; it is a most comprehensive publication supplemented by detailed historical notes.

The holdings of Rhodesian libraries are included in two microfiche union catalogs issued in South Africa. The first is *Periodicals in South African Libraries* (South African Council for Scientific and Industrial Research, and Human Sciences Research Council, Pretoria). It first appeared in 1974. It is published annually; each edition cumulates and supersedes its predecessors. The second is *S.A. Unicat* (State Library, Pretoria). This appears bimonthly; each issue cumulates and and supersedes its predecessors. *S.A. Unicat* supplements the *South African Joint Catalogue of Monographs on Microfiche, 1941–1975*, which contains entries received for the union catalog maintained by the State Library, Pretoria, from 1941 to 1975.

Several projects were carried out by or in cooperation with the university. They include:

Pichanick, J., comp., *Rhodesian Literature in English: A Bibliography, 1890–1973*, Mambo Press, Salisbury, in preparation.

Rhodesia, Legislative Assembly, *Catalogue of the Parliamentary Papers of Southern Rhodesia, 1899–1953*, compiled by F. M. G. Willson and G. C. Passmore, Univ. College of Rhodesia, Salisbury, 1965.

University of Rhodesia, Library, *Catalogue of the C. M. Doke Collection of African Languages in the Library of the University of Rhodesia*, G. K. Hall, Boston, 1972.

University of Rhodesia, Library, *Catalogue of the Godlonton Collection of Rhodesiana*, Univ. Library, Salisbury, 1972.

Supplements record the growth of the collection.

Wilding, N. W., comp., *Parliamentary Papers of Rhodesia, 1954 to 1970*, Univ. of Rhodesia, Salisbury, 1970.

A work of interest for its listing of 19th-century publications in the area that is now Rhodesia is:

Hess, R. L., and D. M. Coger, *A Bibliography of Primary Sources for 19th Century Tropical Africa as Recorded by Explorers, Missionaries, Traders, Travellers, Administrators, Military Men, Adventurers, and Others*, Hoover Institution Press, Stanford, Calif., 1972 (*Hoover Institution Bibliographical Series*, No. 47).

From the preface: "The purpose of this bibliography is to give an indication of the vastness of the sources for 19th Century tropical Africa, to provide a useful reference work until the state of African historical bibliography attains the level of that of other fields of history. . . ."

An analysis of periodicals by region and by subject within region, which includes titles published in Rhodesia as well as overseas and in other parts of Africa, is contained in:

Africa South of the Sahara: Index to Periodical Literature, 1900–1970, G. K. Hall, Boston, 1971.

This publication is compiled from the card index of the African Section of the Library of Congress: ". . . most references are to articles published in the last ten years in the major scholarly journals of Africa, Asia, Europe, and North America. . . . The beginning date of 1900 has been selected to indicate that the index covers primarily material published in the 20th Century. . . . This index is intended to provide the researcher with citations to the contents of journals not covered in the standard guides to periodical literature" (from the Preface). The first supplementary volume, which covered the period January 1971 to June 1972, was published in 1973. Among the periodicals indexed is *Zambezia: The Journal of the University of Rhodesia*.

A bibliography of bibliographies and reference works, and of the bibliographic resources of the region, is contained in:

Guide to Research and Reference Works on Sub-Saharan Africa, edited by P. Duignan, compiled by H. F. Conover and P. Duignan, Hoover Institution Press, Stanford, Calif., 1971 (*Hoover Institution Bibliographical Series*, No. 46).

This work contains numerous references to Rhodesian bibliography and includes a list of periodical articles and documents on libraries. Rhodesian bibliographies are described in sections 2155–2157; reference works that include bibliographies are listed under sections 2158–2181.

Additional indexing of periodical articles on Africa is effected by *Index Africanus*, compiled by J. O. Asamani (Hoover Institution Press, Stanford, Calif., 1975; *Hoover Institution Series*, No. 53). The work of compilation was carried out at the School of Oriental and African Studies of the University of London. Some 200 periodicals were analyzed, as well as Festschriften, congress proceedings, and other collective works. "The present *Index* contains articles published in journals concerned with Africa as a whole, as well as those dealing with individual regions or countries or disciplines. In addition . . . a large number of journals in various fields not dealing exclusively with Africa have been examined" (from the Preface). The Rhodesian section is on pages 368–384.

A list of periodicals relating to Africa, which includes a substantial number of entries relating to Rhodesia, is:

Sub-Saharan Africa: A Guide to Serials, compiled by the African Section, Library of Congress, Washington, D.C., 1970.

Several bibliographies on Rhodesia are included in:

Besterman, T., *A World Bibliography of African Bibliographies*, revised and brought up to date by I. D. Pearson, Blackwell, Oxford, 1975.

An annotated list of Rhodesian items is given in columns 149 and 150.

Theses on Southern Africa presented in over 30 countries are listed and annotated, by subject and country, in:

Pollak, O. B., and K. Pollak, *Theses and Dissertations on Southern Africa: An International Bibliography*.

Rhodesia appears under each subject heading.

A list of books on Rhodesia, a description of some of the relevant bibliographical material, and references to publications relating to Rhodesian libraries and librarianship appear in:

Panofsky, H. E., *A Bibliography of Africana*, Greenwood, London, 1975.

Not included in this review are specialist bibliographies, abstracts, and indexing services that contain references relevant to Rhodesia. Because, however, of the importance of the subject in tracing the cultural history of the region, the archaeological bibliography should be noted; this is:

Cook, C. K., *An Archaeological Bibliography of Rhodesia from 1874*, compiled on behalf of the Commission for the Preservation of Natural and Historical Monuments and Relics. Salisbury, 1971.

This is a continuing project.

The bibliographies produced by reference and information retrieval services in Rhodesian libraries are not included here. Some of the work in progress at the university will lead to publication; it includes a catalog of the Astor Collection in the University Library, which consists largely of Confederate records and memoirs of the American Civil War. Also in preparation is an index of the publications of members of the Faculty of Medicine.

A useful survey of some Rhodesian bibliographical projects is contained in four papers by C. Coggin; they are:

"Rhodesian Bibliography: A Survey," *Rhodesian Librarian*, **2**, 81–98 (1970).

"Rhodesian Bibliography: Recent Contributions," *Rhodesian Librarian*, **3**, 70–72 (1971).

"The Future of Rhodesian Bibliography," *Rhodesian Librarian*, **4**, 52–56 (1972).

"Rhodesian Bibliography: Part 3," *Rhodesian Librarian*, **4**, 74–75 (1972).

ALBERT HARRISON

RICE UNIVERSITY LIBRARIES

A charter for the William M. Rice Institute for the Advancement of Literature, Science, and Art, Houston, Texas, was issued by the State of Texas in May 1891. This institute, later to be the university, takes its name from its founder, William Marsh Rice, a native of Massachusetts who started to build his fortune in Houston and elsewhere in Texas before and during the American Civil War.

Mr. Rice provided the original endowment and laid down in the charter the broad, flexible objectives required to create a school that would meet the needs of the area and of changing times. In terms of library history, it is interesting to note that Article Two of the charter calls for "the establishment and maintenance, in the city of Houston, Texas, of a Public Library . . . ," as well as the educational institution itself. By the time the Rice Institute opened its doors to students on September 23, 1912 (the 12th anniversary of the death of its founder), under the presidency of Edgar Odell Lovett, the Houston Lyceum and Carnegie Library had already been established (1904), and there was no further need for the trustees of Rice to establish a public library.

The Rice Institute opened without mention of a library for its students. The first reference to an institute library is in the announcements for the second academic year (1913–1914):

> Temporary quarters for the Library of the Institute have been provided on the second floor of the Administration Building. In its initial equipment the policy is being followed of providing only such books as are necessary to supplement the

> courses of instruction and to support the independent investigations of the staff and advanced students . . . for works of general and more popular interest the shelves of the Carnegie Library of Houston are accessible to all members of the Institute.

The first staff member of the library was Alice Crowell Dean, who began her duties in September 1914 while still a student assistant. She continued to guide and direct the growth of the library for the next 34 years, for all but the final year as acting librarian.

Between 1913 and the beginning of World War II, the small, slowly growing institute library successively occupied space in four separate locations on campus. The Library Committee, faculty, and small library staff gave considerable attention to building a collection of the finest basic materials available on the market. Toward the late 1930s there was some consideration of a new library building, but plans were abandoned when the United States entered the war.

In 1944 Rice joined with 14 other schools which were planning new library buildings in establishing the Cooperative Committee on Library Building Plans. The plans for Rice's library were discussed at one of the committee meetings and were then thoroughly analyzed by John E. Burchard, director of libraries at the Massachusetts Institute of Technology. He recommended (among other things) in a 1945 report to the trustees that the library at Rice be a central library in order to help meet the long-range academic program adopted by the trustees in 1945, which called for the construction of other buildings as well.

The resulting library, dedicated on November 4, 1949, was made possible by a gift from Houston's Mrs. W. W. Fondren and her children, and it was named as a memorial to Mrs. Fondren's husband. The Fondren Library consisted of 126,000 square feet on seven levels and was designed as an open-shelf, open-stack library with a stated capacity of 600,000 volumes. The library was located near the physical center of the campus. Approximately 200,000 volumes were moved to the new building as the opening-day collection.

Dr. William V. Houston, who became president in 1946, appointed Dr. William S. Dix to be librarian of the Fondren Library on January 1, 1948. Dr. Dix, who had been associate professor of English at Rice, served until 1953, when he was named librarian of Princeton University. In those 5 years professional staff services were improved and collections were developed to meet the long-range program for Rice that the Board of Trustees had adopted in 1945. A Friends group was established for the Fondren Library in 1950.

Dr. Hardin Craig, Jr., of the History Faculty was appointed librarian in 1953 and served in that capacity until 1968. These were years of great change for Rice and, therefore, for the library. The name Rice University was adopted in 1960; President Houston retired the same year, and Dr. Kenneth S. Pitzer became Rice's third president the following year. A 10-year plan for the development of Rice University, 1965–1975, was adopted. This called for an enlarged faculty and student body; greatly strengthened programs in the humanities, social sciences, and in fine arts; new doctoral programs; new professional programs, etc., in

pursuit of the goal of being a national, private university of high quality. Provision for a major addition to the Fondren Library was recognized as necessary for these developments to be fully successful. With the aid of another major gift from the Fondren Foundation and Trust and a grant through the Higher Education Facilities Act, construction on a 100,000-square-foot Graduate Addition began in 1966; the entire building was rededicated in April 1969. Collections and library services expanded in the 1960s; the new services included, in 1967, a fee-based information and literature searching service for the rapidly growing business and research community of Houston and South Texas. Richard L. O'Keeffe, formerly associate librarian of Fondren Library and director of the information service (The Regional Information and Communication Exchange) was appointed librarian by President Pitzer in 1968.

The Fondren Library was admitted to membership in the Association of Research Libraries in 1971. By 1976 its volume count was close to a million and its microforms count was 1 million.

The only branch library on the Rice campus at present, that for art, was established in 1969.

Special mention should be made of the Woodson Research Center, which is part of the Graduate Addition. It houses Fondren's special collections of rare books and maps, manuscripts, and university archives. Notable among its book collections are: the 4,000-volume Axson Collection of 18th-century drama, a Civil War imprints collection numbering about 3,000 items, the Masterson Texana Collection, and the Bartlett Beethoven Collection. Its manuscript holdings are strongest in the areas of British naval history, of the Civil War, and of 19th- and early 20th-century Texas business, political, and family history.

RICHARD L. O'KEEFFE

RICHARDSON, ERNEST CUSHING*

E. C. Richardson was born in Woburn, Massachusetts on February 9, 1860, being one of four children in a family of modest income. He graduated from Woburn High School in 1876. His purpose in going to college was to prepare himself for the ministry. Amherst College offered him a part-time job in the library and since he had to have a source of additional support for his education, Amherst became his choice of college.

At Amherst College, Melvil Dewey had graduated in 1874 and had become the librarian of the college upon his graduation until 1876. Richardson's first year at

* Reprinted by permission of the American Library Association, from "Ernest Cushing Richardson, 1860–1939," Dikran Y. Hadidian, *College & Research Libraries*, 33, 122–126 (March 1972).

Amherst was Dewey's last year as librarian, and one would like to believe that freshman Richardson, as part-time worker in the library, would come in contact with Dewey. This was not the case. Melvil Dewey's assistant, W. S. Biscoe, succeeded him as librarian and Richardson received his official training under his supervision. In his senior year, Richardson served as assistant librarian. This position did not keep him at Amherst. He left for Hartford, Connecticut to study for the ministry at the Hartford Theological Seminary. Again, his choice of the seminary was based upon the opportunity offered there for part-time work in the library. Dr. Chester David Hartranft, Jr., the librarian of the institution, was one of the charter members and founders of the American Library Association, and Richardson worked under him during the three years of his theological education. A graduate of the seminary, Mr. Henry Hopkins Kelsey, class of 1879, was appointed as assistant librarian to Dr. Hartranft to relieve him from routine work; due to the fact that both men were also involved in teaching responsibilities, however, the library was essentially left in the hands of E. C. Richardson, who became assistant librarian in 1882 during his senior year (compare his same position at Amherst), and librarian in 1884, when Dr. Hartranft resigned only to become the president of the institution some four years later.

In a letter dated April 4, 1885, Richardson had this to say about the image of a librarian in an academic theological institution:

> During my college course, I used to hear a good deal of talk among librarians, to the effect that the old conception of librarianship had passed away. . . . It was considered that the appointment of Winsor at Harvard was a practical culmination and establishing of the idea that librarianship was a learned profession and the librarian in a literary institution, a professor. . . . In thinking, therefore of the position of "librarian" I had hardly thought of it except as ultimately a regular constituent of the faculty. With that conception I have been working and trying to fit myself for the position. I believe that in view of his large opportunities for influencing the opinions of the students . . . and that his opinions are looked on by those without as representing the Seminary, the librarian should be in direct relation with those who form the policy, whether doctrinal, pedagogical or prudential of the Seminary. The librarian, as I understand it, would stand in much the same relation to an institution as the regular professors. His pedagogical methods are different and less systematic but important, his literary relation to the Bibliography, Literary History and Encyclopedia of the Church, the same as that of the Prof. to his department, and his responsibilities not parallel to, but demanding an ideal of attainments similar in kind to those of the other departments and exceeded in extent by none. A theological librarian should at the lowest aim at a thorough knowledge of Theological Encyclopedia, Literary History, and Bibliography, some considerable knowledge of Palaeography, a knowledge of at least ten or a dozen languages, besides the technical matters of library science, collating, keeping stock, which involve a good deal of study of typography, art of binding or engraving, etc., etc., etc. (*1*).

E. C. Richardson remained in Hartford until 1890, when he left for Princeton as assistant librarian and later, librarian, until his retirement in 1925. His early years at Hartford seemed to indicate that as a librarian he did not receive either

verbal recognition of his contribution to scholarly research, or adequate financial remuneration for the work performed. In his letter to the prudential committee dated June 25, 1885, he wrote,

> To the best performance, I gave up all teaching during term time and other opportunities for private work at a cash loss very modestly estimated at $1,000 and devoted many more hours a day to my work than any other theological librarian, almost any librarian in the country, worked voluntarily through vacations and neglected no opportunity or pains or expense to improve myself and my profession. Your misconception must be from a misconception of the nature and requirements of the profession.

A crisis, small or great, brings out the worst and the best in an individual's thoughts. The fact that the institution did not give the rank of a professor to the librarian prompted Richardson to write an eighteen-page letter to the faculty, dated April 13, 1886. "I am anxious to have the right to the title 'professor' but not so much for the 'honor' or 'position' socially, in itself considered. It is to be sure, humiliating to occupy a position which is popularly looked on as one of accepted inferiority, but it is good discipline in humility, which I need. . . . But the fact has a practical bearing too. The position has been publicly construed as well as popularly regarded as less than that of Associate Professor." The letter (page 11) is resumed on April 21: "Since writing the above I have had a visit from a gentleman connected with the Brooklyn Library. Not long since, as you know, I had a letter from Mr. Dewey, Librarian of Columbia College and secretary of the Library Association, asking if I would accept an election to the Brooklyn Library. . . . The two other names considered were those of Justin Winsor of Harvard College and Mr. Cutter of the Boston Athenaeum." The salary of E. C. Richardson was $1,500; Mr. Winsor was receiving $4,500 and Mr. Cutter, $3,500. Brooklyn Library would not offer less than $3,500, and would perhaps offer more than $4,500 in order to bring Mr. Winsor to Brooklyn. Richardson writes in the same letter: "I told him that the money had little weight. I gave him some reasons—especially my decided theological and religious connections—why I should not be on the whole the man for them. . . ." Richardson's rank was raised to associate professor in May 1888, and this was perhaps due to the fact that Washington and Jefferson College was to confer on him an honorary Ph.D. degree, primarily for his contribution to preparing *Bibliographical Synopsis* of the literature relating to the works included in *The Ante Nicene Fathers* published in Buffalo by the Christian Literature Company in 1887. His leaving Hartford for Princeton in 1890 was explained in a letter dated April 1, 1894, when he wrote to Dr. Hartranft: "Do you think there is likely to be anything in the plan for my return to Hartford which you have hinted at once or twice. . . . I left Hartford under the pressure of a financial need which no longer exists. . . ." For in 1891 he married Grace Duncan Ely, and she brought a modest amount of wealth into the family which "allowed him the freedom of as many as seventeen trips to Europe for travel, professional meet-

ings, study and book purchase" (*2*). The Princeton years were his most productive period. His first massive work was on *Periodical Articles on Religion, 1890–1899,* in two volumes. (The first, a subject index, and the second, an author index published in 1907.) Other works better known in college and university libraries are the following:

Classification, Theoretical and Practical (New York: Scribner's, 1910), and two additional editions in 1912 and 1931; *Beginnings of Libraries* (Princeton and London: Princeton University Press and Oxford University Press, 1914), *Biblical Libraries* (Princeton and London: Princeton University Press and Oxford University Press, 1914); *Some Old Egyptian Libraries* (New York: Scribner's, 1911); *Some Aspects of Cooperative Cataloguing* (New York: H. W. Wilson Co., 1934); *Some Aspects of International Library Cooperation* (Yardley, Pa.: G. T. Vook and Son, 1928).

On March 15, 1935, Richardson read a paper on "The Future of Union Catalogs and of Cooperative Selection and Purchase" at a meeting of the American Library Institute in Atlantic City. What is significant in this paper is perhaps the final paragraph where Richardson states the following: "In view of the statement made in behalf of A.L.A. that, since less than eight percent of the A.L.A. membership is directly interested in the problems of the libraries of learning, it can do nothing to help solve them, it might seem to the members of this Institute which selects its membership from the librarians most interested in intellectual research and production rather than in administration that the duty of keeping up the burden of the research aspect of library management is thrust upon this body which is ostensibly one hundred percent interested in the problems of intellectual cooperation" (*3*). One cannot help but remind librarians of this generation of the distinction made by Richardson between administrative pursuits and scholarly and intellectual research in librarianship. His works are good examples of scholarly and intellectual research which he did not restrict to the United States. In May of the same year, 1935, Richardson read a paper at the Second International Congress of Libraries and of Bibliography in Madrid, Spain. He began his paper as follows:

" 'To skin a deer,' says Bracton, 'first catch your deer.' 'To cook a hare,' adds Mrs. Glasse in her famous cookbook, 'first catch your hare.' It is the same with books. Bacon says that some books are to be tasted, some to be swallowed, a few to be chewed or digested, but to taste, chew, swallow, digest, catalogue, borrow, visit, copy, buy or steal a book, you must first find your book. . . . The task of libraries is to get together recorded ideas for the use of synthetic thinkers" (*4*). In his doctoral dissertation, Lewis C. Branscomb, Jr., writes, "Ernest Cushing Richardson lived ahead of his day. His zeal and tireless efforts—in the area of cooperative selection of library materials, acquisition, cataloging and compilation of union catalogs, attained, in his own mind, distressingly limited realization" (*5*). The Librarian of Congress paid tribute to Richardson's contribution in these words, "The Union Catalog, although many shared in its building, is in special, the effective realization of the dream of Dr. Ernest Cushing Richardson. . . . Long before Dr.

Richardson came to Washington . . . he had caught the vision of the service to scholarship that could be rendered by a cooperative bibliographical undertaking such as the Union Catalogue in its present form. . . ." (*6*). This bibliographic project was known as Project B. It was defined "as a task of increasing the bibliographical apparatus of the Library of Congress and more specifically the extension of the union catalogue of printed books and the catalogue of special collection" (*7*). Upon conclusion of the project in 1932, when it was turned over to Library of Congress staff, Branscomb stated "Original goal of 6,000,000 titles located for use [had been] reached and surpassed" (*8*). "The primary material as turned back to the Library of Congress consisted of: 1. Union catalog of printed books in American Libraries. 2. A supplement union catalog of printed books in foreign libraries. 3. A union catalog of special collections in American Libraries. 4. A supplement union catalog of special collections in foreign libraries. 5. A union list of world manuscripts" (*9*).

One may summarize his other contributions by brief phrases: (1) "Title—a bar" printing of card catalogs and catalogs of books; (2) Regarding classification, he believed that the cataloger should blend theory with practicality, and in case of conflict, the practical should prevail. For him, classification was the highest function of the librarian's art, and it was an art, not a science; (3) He believed in cooperative selection, cooperative purchasing, and cooperative cataloging. Full cataloging he considered "the curse of bibliographic cataloging." It is worth noting in this connection a very unusual meeting on the Princeton campus when as a result of Richardson's efforts, Grover Cleveland, Woodrow Wilson, John L. Cadwalader, and John S. Billings of the New York Public Library came together and "spent a long and serious afternoon studying the problems of the university library and chiefly the problem of encouraging cooperative cataloging by the use of printed cards. It was an impressive spectacle to a librarian to see an ex-president of the United States taking as earnest a responsibility in a matter of technical library cooperation as he did in his public duties—and his unsparing pains in these is a part of history" (*10*). Branscomb comments with these words, "Seldom have library problems been pondered by such distinguished and able gentlemen" (*11*). In 1925, Richardson became the Honorary Consultant in Bibliography and Research at the Library of Congress, and it was during this period that his projects listed above were accomplished. He retired to his Old Lyme home in Connecticut in 1936, and died there at the age of 79 in 1939. Thus came to an end the life of a librarian whose contribution truly fits the words spoken in 1780 by the Abbe des Housayes, librarian of the Sorbonne, "A librarian truly worthy of the name, should, if I may be permitted the expression, have explored in advance every region of the empire of letters, to enable him afterwards to serve as a faithful guide to all who may desire to survey it and though it is by no means my intention to give the preference above all other sciences to the science of bibliography . . . it will be nevertheless be permitted me to consider the science as the forerunner of all the others as their guide who is to light them with his torch. . . ." (*12*).

REFERENCES

1. The letters of E. C. Richardson are deposited in the Archives Room of Case Memorial Library of the Hartford Seminary Foundation in Hartford, Connecticut.
2. Ruth Currie, "Ernest Cushing Richardson," an unpublished paper written in 1966 at the University of North Carolina School of Library Science, Chapel Hill, N.C., p. 4–5.
3. From a privately published source deposited at the Archives Room of Case Memorial Library.
4. Ibid.
5. Lewis C. Branscomb, Jr., *A Bio-Bibliographical Study of Ernest Cushing Richardson, 1860–1939*, University of Chicago, 1954 (microfilm), p. 54.
6. Ibid.
7. Ibid., p. 50.
8. Ibid., p. 52.
9. Ibid., p. 53.
10. E. G. Richardson, "The University Library in Its Cooperative Aspect," *School and Society* 32:218 (1930).
11. *Pioneering Leaders in Librarianship;* ed. by Emily Miller Danton (Chicago: American Library Association, 1953), p. 149.
12. John L. Thornton, *Classics of Librarianship* (London: The Library Association, 1957), p. 27–28.

DIKRAN Y. HADIDIAN

ROCHESTER, UNIVERSITY OF ROCHESTER LIBRARY

Impossible dreams were the dreams of University of Rochester founders. They envisioned a university which would be "a great depot of intellectual wealth and wisdom," and its $50,000-library, which would be a "full, free, and ever-flowing fountain" of knowledge. It is a wondrous fact that these aspirations never really faded, even though repeatedly faced with the sorry realities of finances and the harsh strictures of war.

The men who proposed the university, who initiated its opening in 1850, and who proceeded undaunted through the years of mere survival, were visionaries, to be sure—but, they were also make-do men. From the most meager of beginnings and support they built and created, laying the cornerstone upon which the university and library of their hopes eventually approached their early goals. What they did with very little laid the basis and the inspiration for expansion in the 20th century. As one university historian, John Rothwell Slater, expressed it in his address, "Rochester at Seventy-Five":

> If we smile at it [the past] today, our smile is the smile not of superiority but of a thoughtful regret. We have gained much; but one thing is lost beyond recovery, and that is the power to do much with little, to make brains take the place of dollars, to build sound education upon unsound finance; to fill bare rooms with

ambitions and splendid dreams, for which our modern school houses of stone and steel too often wait in vain (*1*).

The University of Rochester opened its doors on the first Monday in November 1850, in the former United States Hotel, a four-story structure of brick and stone. The founders had a charter, one building, 60 students, and a faculty of eight. Equally modest was the one-room, poorly lighted, and poorly heated library on the first floor of the hotel. These humble library quarters were a compromise enforced by financial necessity, since the founders initially had issued a plea to friends in western New York to raise $50,000 to purchase books and erect a building for the university library. The ambitions were to create a "literary rallying point" not only for the students and faculty, but also for the ministers, doctors, lawyers, merchants, farmers, and mechanics of western New York. These extravagant plans evaporated as the money was not forthcoming, and the remaining concern was to create a serviceable reading room where students could prepare their essays and speeches.

The first book purchased by the university was a quarto Bible for the Chapel, which was also housed in the United States Hotel, but the first book actually purchased for the library was a two-volume copy of Julius Weisbach's *Principles of the Mechanics of Machinery and Engineering*. The second book purchased was John Stuart Mill's *Logic*. Orders were placed in Rochester and others were mailed to New York and Europe for books and periodicals. Among those first purchases were a set of 30 volumes of the collected works of Charles Rollin (in French), the *North American Review*, the *Edinburgh Review*, Jared Sparks's *Library of American Biography*, Stone's *Life of Red Jacket*, and the works of Goldberg and Macaulay. In 1852 the school spent $2,083 on books, of which $1,180 went for books from sales in England and $300 was given to Asahel Clark Kendrick, professor of Greek, to buy books on his trip abroad. Book buying was directed to the purchase of standard works in language, history, literature, and science, with a policy of filling the library shelves with only "good" books.

Several professors, including Professor Kendrick (who was to become the university's first librarian), donated their personal libraries to the new library. There were some gifts from friends of the new university, although one early librarian reported that "we never encourage friends to send us the refuse from their attics." One friend, Dr. John F. Boynton, of Syracuse, gave the proceeds of a lecture on Egypt toward the purchase of Lepsius' *The Monuments of Egypt and the Nile*. Another friend, David Mills, of Brooklyn, gave Lord Kingsborough's *Antiquities of Mexico*, a nine-volume folio set valued at $200 at the time. A "benevolent gentleman in Newark" purchased 55 volumes of collections of the various historical societies, and forwarded them to Rochester as a beginning for a department of American history; and Theodore Van Heusen, a merchant of Albany, presented a volume on the lives of American generals and commodores, with descriptions of medals struck off in their honor.

The fledgling school also had the advantage of using the library of the Rochester Theological Seminary, which shared the hotel facilities for the 10 years the uni-

versity occupied that building. In 1851–1852 the combined libraries had over 3,000 volumes. By the next year, the total had increased to nearly 10,000 volumes, when the seminary acquired the private library of Johann August W. Neander, the German ecclesiastical historian. This library, although such a young institution, attracted the attention of a Syracuse newspaper, which reported that it was "one of the best libraries we have ever seen . . . selected by the most experienced bibliothecaries, and devoid of old lumber and trash of all kinds" (*2*).

The library's pace of growth was impressive in its first 3 years of existence, but it slackened from 1854 to 1865, due mainly to the financial difficulties faced by the university. In that period only about 200 volumes were added each year.

Seemingly there were no great pressures for more substantial or dramatic changes in the library. The curriculum of the school was modest and fixed. For the students, classroom lectures were supplemented only by prescribed texts. They were not asked or expected to concern themselves with research, and, therefore, their use of the library was only casual. The educational requirements were also reflected in the administration of the library. It was open only one hour a day for consultation and two hours on Saturdays for the withdrawal of books. Students supervised the library during these limited hours, and their chief tasks were to enter new books on the accession list and to record the books borrowed and returned. The student assistant would sometimes fail to report to work; then the supervision of the library fell to the school janitor.

A librarian was not formally appointed until 1853, although Albert H. Mixer, professor of modern languages, and Ezra Job Fish, a senior from Medina, New York, had served in that capacity. The first duly appointed librarian was Professor Kendrick, who was chosen by the faculty to serve on a spare-time basis and to prepare the library's first catalog. The catalog Kendrick created was comprised of two folio books, bound in leather with sheets of cheap brown paper. In these books he pasted author–title slips, spacing them carefully so that he could make additions in the alphabetical sequences. At about the same time a student assistant started an accession book, in which each library volume was entered and assigned a number which no other volume would ever have. Kendrick's book catalog was discontinued in the 1860s, but the accession record was maintained until July 1962. Both are preserved in the library today.

Kendrick and his assistants seemed concerned primarily with accounting for the whereabouts of books and with keeping statistics. Commonly read in early reports of the librarians to the Board of Trustees was the somewhat proud assertion that "with a very few exceptions the books can be accounted for by being on the shelves or charged on the register." Ezra Fish reported this happy condition and added hopefully that, of the exceptions, "the majority will I think be found (safe no doubt) in the hands of those over whom the Librarian has no supervision." And, would that a librarian today could echo Fish in saying: "A very small No. (only 2 or 3 that I now remember) called for by the catalogue I have never been able to find" (*3*).

Most of the responsibility for selecting books for the library during these years

was assumed by the first president, Martin Brewer Anderson. Interested in the library and its development, he selected many of the volumes himself, and he considered all recommendations from the faculty. He then passed his choices on to the executive committee of the Board of Trustees, which in these early days made the final decision on all purchases.

It was not the university's fortune through these lean years to receive gifts of great and significant private libraries, or of substantial endowments to provide an impetus for library growth. There were a few modest gifts from founders and friends of the university and from faculty members. Reverend Frederick W. Holland of Boston, formerly the Unitarian minister in Rochester, donated a large and valuable collection of books. Reverend William Dean, upon whom the university had conferred an honorary doctorate, sent a collection of Chinese books from Hong Kong. These included the classics of Chinese literature and Christian writings about China, together with a selection of oriental curiosities, all of which he hoped would form the nucleus of an important Chinese library. Although his contributions were lost or given away through the years, his hopes were eventually realized in the 1960s with the establishment of an East Asia (Chinese and Japanese) Library. By 1857 the University of Rochester library had acquired 6,500 volumes, aside from the collection of the Theological Seminary.

In the early 1860s the university moved from the United States Hotel to new quarters on University Avenue. When the move was completed in the fall of 1861, the library was housed in Anderson Hall, the first university building on its new campus. The library was given a 30 by 40 foot room on the first floor, directly back of the front hall, making the library room the easiest to pass into upon entering the building. Because of this easy access, the library room became the rendezvous of students before chapel hour in the morning.

With the new building and campus there were new hopes, but the realities of the Civil War dashed them. The students marched off to war, only about 100 remaining in the classrooms; the cost of living boomed, and salaries were cut. There was little money available for university expenses. The university struggled to remain open and as a result the library could do little more than maintain its existence.

At war's end in 1865, President Anderson did turn his attention to the library, reporting to the trustees in his annual report:

> It is highly important that more labor and care be given to the library. There is needed now the work of a man for three months on the books and pamphlets, to put them in a proper state. Many books need binding; and a more careful administration of the library is needed. This, like all deficiencies, is a matter of money. We cannot expect the librarian, who has nothing for his work; nor the assistant, who has but $100 a year, to do any great amount of work on the books. . . . (*4*).

Until 1866 the library had an annual budget of only $300, of which $200 went toward the purchase of books and $100 to pay the library assistant. Part of this came from a student library fee of 50 cents per term, increased in 1863 to $1. It was not unusual in those days for the librarian not to receive compensation for his work. Many institutions did not pay a salary, since the librarian usually received

compensation for teaching or some other duty. Some statistics prepared in 1859 by William J. Rhees of the Smithsonian Institution showed that of some 86 colleges which paid their librarians, the average salary was $450 a year.

It was during the 1860s that the library was the beneficiary of its first major endowment. In 1857 the state had granted a $25,000 fund "for books, philosophical apparatus and university buildings." The grant was contingent upon the raising of a "matching fund," which was generously provided by General John F. Rathbone of Albany. He donated valuable timberlands in Pennsylvania, and when this matching gift became available in 1866, it formed an endowment which through the years has provided more than $100,000 in income for books and other library expenses.

President Anderson's call for more "careful administration" of the library was answered in 1866 with the appointment of Otis Hall Robinson (a graduate of the university in 1861, and professor of mathematics) as assistant librarian. He became librarian in 1869. He was a lover of system and order and he plunged into the business of organizing the library, doing all of the work himself as he assumed the responsibilities formerly held by student assistants. It was not until the 1870s that he had one student assistant. And although he too was a part-time librarian, he found the energy to improve library techniques, to improve student use of the library, to assist in the founding of the American Library Association, and to contribute papers to various library publications.

Robinson initiated Rochester's first card catalog on the dictionary plan, although he did so over many objections, such as: "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."

Robinson enlisted the aid of Joseph H. Gilmore, professor of rhetoric and English literature, and several student assistants. They wrote out all the cards, for 9,560 volumes, in 93 hours, completing the task in the summer of 1870 at a cost of $329 for labor and materials.

It was progress, but frustrating progress, since there was nothing to hold the cards in place, and users were apt to "borrow" the cards to use as a reference. But Robinson was inventive, and he was to devise a solution which became the common practice of all libraries. He described the situation and his solution quite precisely:

> The tendency of even careful persons was to pick up from the case, a small bunch of cards for a close examination, and when examined to put them back, while the mind was occupied with the contents of the card, into any convenient opening. I am informed that this is still a great annoyance in many libraries where card catalogues are used. To overcome this difficulty the cards were then punched near the lower left-hand corner, as they now appear, and a short wire inserted, running through the entire case. . . . (*5*).

Robinson then devised a stiff rod to hold the cards in place. He is not always given credit for this now widely used invention, for a French librarian, M. Pincon,

also had experimented with such rods and holes. However, only Robinson's scheme worked, because he was clever enough to make the holes larger rather than the same size as the rod.

This handwritten catalog, which at first was contained in two trays, served the needs of the library some 41 years, until 1911, when technically trained assistants were hired. They supervised the replacement of the old manuscript cards with cards of standard size, printed by the Library of Congress.

As the 1860s came to a close, the library was being crowded out of its one-room quarters in Anderson Hall. Robinson complained of the conditions in his annual reports, and a university committee which examined the library in July 1869 recommended that "within a few years a separate and commodious building" should be erected in which the library could find a permanent home. Hopes rose in 1870 when President Anderson announced that Hiram Sibley, a prominent Rochester businessman and a trustee of the university, would construct a "fireproof" building with the purpose of creating a library available to the general public.

By Rochester standards in the 1870s, Sibley Hall was a most imposing structure. It was made of Medina brownstone, capped with a cornice of Ohio sandstone and a mansard roof. The outside walls were double, with a light brick wall standing inside and a few inches distant from the heavy outside stone wall. More windows were included than usual, in order to eliminate the dark corners, although students later complained that the windows were so dirty that they could see no improvement. On the ground floor, the principal library room measured 40 by 100 feet and rose to a height of 25 feet.

Finally, in the summer of 1877, the Rochester library collections were transferred from Anderson Hall to Sibley. In the 12 years that Robinson remained as librarian, the library accumulated more than 25,000 volumes. Although he attempted to open the library for more hours (sometimes 4) a day, the usual opening was for 2½ hours. It was not until 1890 that the library was open as long as 5 hours a day, and not until 1900 that a full daily opening was the custom. Although the library now had relatively more commodious quarters, the accommodations for patrons could hardly be called comfortable or pleasant. Visitors to the library complained of gas odors from the lighting fixtures, and more often of the temperature, which averaged 58 degrees during the winter. However, Rochester for the first time had adequate facilities for its library operations, and President Anderson thought he had good reason to describe the library as "one of the best organized libraries connected with any college" (*6*).

During the 1880s the picture darkened for both the university and its library. Once again, financial debts proved overwhelming. Salaries were cut; President Anderson retired and Robinson retired as librarian. Acquisitions dropped from a high of 1,240 volumes a year to a mere 515 volumes. However, a few valuable private libraries were bequeathed to the university when several of the older faculty died. In later years, one of these bequests had its somewhat amusing aspect. A highly respected faculty member died and the university purchased his "personal" library from the estate. What wonderment was created when it was discovered that

a large number of the volumes which the library had acquired were library property "borrowed" throughout the years by the professor. One of the most important gifts of books to come the library's way was that of the 1,900-volume library of Reverend R. J. W. Buckland of New York, a former faculty member of the Rochester Theological Seminary. This library was purchased by John Hall Deane, an alumnus and trustee, for $2,000 and donated to the university.

One of the library's most colorful personalities started work in 1880. He was the university's perennial assistant librarian, Herman Kent Phinney. For 50 years, Phinney, with his wispy, uncut beard and apple-red cheeks, was a familiar figure in the library and on the campus. He was forever an assistant librarian, and in painstaking fashion he performed much of the tedious labor of record keeping, besides stoking the library fires and cleaning the plugged gas jets. In his own words, his work was:

> always quite multifarious and unostentatious. The circulation of books . . . the reception, checking, sewing and cutting the periodicals . . . the collation of sets for the annual binding . . . the ordering of the periodicals, the new books . . . the criticism and entering of the bills in the accounts kept here; the labeling, cataloging and often times cutting of the leaves of the new books; the guidance of readers to the books . . . the regular scanning of the religious and secular papers. . . . (7).

He failed to mention his annual June visit to the fraternity houses, carrying a basket in which to load whatever missing books he could find. Students looked forward to these visits and vied for the distinction of providing him with the heaviest "load."

For a few years in the 1890s, Arthur Latham Baker, professor of mathematics, served as librarian. During his administration he organized the government documents for more effective use, and he made arrangements with the Rochester Academy of Science for the library to become the depository of all the academy's publications.

Most of the library operations during the 1890s were directed by a faculty committee which delegated the tasks of running the library to Phinney. The university was gradually expanding its curriculum and offering more electives. Academic departments were increased and the enrollment rose. Classes were scheduled for the entire day and students began to enjoy free hours between classes, thus turning to the library for a study hall, which necessitated a full day's schedule of library hours. Students claimed that they would use the library even more if comfortable chairs were provided and if resources in fiction, poetry, and science were enlarged.

This new and expanding role of the university created new pressures upon the library. Students complained of the inadequate lighting and heating, and physical improvements had to be initiated. Among them were electric lights in 1898! These new lights caused the student newspaper to comment: "The library has been wired for electric lights so it will now be possible to read there on afternoons and dark days without straining the eyes and it is whispered that there is a possibility of opening the library in the evening. . . ." (8). A typewriter for the staff was another innovation that year. The library had 37,000 volumes by 1900, but the students and faculty with their new interests and advanced programs were demanding collections which

would provide something more than just the necessary reading for an undergraduate college.

Some new directions were taken in the ordering of books. In the later years of his administration President Anderson finally turned over the responsibility of ordering books to the librarian, from lists made out by the professors. In 1889 Henry F. Burton, professor of Latin, introduced the use of departmental book fund allotments. After appropriations for binding, periodicals, and books of a general nature, the remaining library funds were apportioned among the several university departments, and the professors instructed the librarian on which books to buy. A typical division of the book fund, one approved for 1900, showed the following allotments: General and continuations, $100; English, $100; Rhetoric, $80; Latin, $80; Modern Languages, $100; Mathematics, $60; Physics, $100; Astronomy, $20; Chemistry, $40; Biology, $120; Geology, $40; and Philosophy, $80.

Rush Rhees, who assumed the presidency in 1900, took early note of the "grave need of books" to support the new curriculum. He sounded a warning that the library must develop as the school would, from a good, regional college into an authentic university. But it was not until the academic year 1908–1909, when Rhees was on a sabbatical, that the urgency of the situation was finally communicated to the trustees by the acting president, Professor Burton:

> The annual appropriation for books, periodicals, and binding is $2,000. Of this amount $550 are expended for periodicals, chiefly of a technical character, covering all departments of learning—languages, science, mathematics, history, philosophy, etc. Such periodicals are the most valuable part of a library intended for students and teachers, as they contain the first results of the most recent investigations. Our periodical list is meagre, but it contains the best journal in every line of English, French, and German.
>
> It is easy to see that the amount per capita that each teacher controls is very small, between $25 and $100, according to the numbers and general character of books needed by the several departments. This sum, $1,000, has remained unchanged for nearly twenty years, while the number of teachers and the number of students have almost doubled, and the number of courses of instruction have increased nearly three-fold.
>
> Obviously on such an income no department can supply itself with all the important books that appear annually upon the subjects which it covers. Only the most indispensable and inexpensive works can be obtained. The limitation falls most heavily on the departments of literature, history, economics, philosophy and education; for they possess no expensively equipped laboratories in which the chief work of investigation is carried on. The college library is their only laboratory; books their only instruments of research. From the standpoint of these departments in particular, as well as upon general grounds, I feel justified in urging the importance of a large increase in the amount of money devoted to the purchase of books. There is at least equal need of increased expenditures in the administration of the library. . . . (*9*).

When President Rhees returned he accepted this challenge and called upon friends of the university to provide new library endowments. Some endowments, as well as gifts of books, were forthcoming. Though relatively small by today's standards, and even by the standards of the older and larger universities of the day,

all of these gifts had a snowball effect on the small college library, and by 1916 there were more than 71,000 volumes on the shelves. In 1909 Charles M. Williams, trustee of the university, established a $3,000 library and museum fund bearing the name of Lewis Henry Morgan, the "father of American anthropology." In 1914 came the Milo Gifford Kellogg fund of $25,000 and the Harkness fund of $1,500, both designated specifically for the library. The important astronomical and nautical library of Admiral William Harkness, some 3,000 volumes and pamphlets, came to the library through a bequest in 1907. The Lewis Henry Morgan library and some 20,000 pages of anthropological manuscripts were received in 1909. Herman LeRoy Fairchild, professor of geology and natural history, gave his personal geological library to the university in 1907. Francis R. Welles, an alumnus who gave generously to the library until his death in 1937, and who had given $500 in 1902, sent a large consignment of books from England in 1908. Another alumnus, Charles A. Brown, presented his extensive autograph collection, and he added to it materially for many years afterward. The professors and students also made their contributions. A group of younger professors—Lawrence Packard and Dexter Perkins of history, Raymond Dexter Havens of English, and Ewald Eiserhardt, professor of German—were the leaders in a movement to abandon textbooks in favor of sending students to the library for research. Packard then initiated a plan whereby fees were paid by history students instead of requiring the students to purchase textbooks. These fees were applied to the purchase of duplicate volumes or single books for undergraduate use. At one time, five or six departments used this method of augmenting their library appropriations, and the total collected from 1913 to 1937 amounted to $21,000, which added great numbers of valuable materials to the library collections.

By 1913 the university had the first of its several special libraries, an art library housed in the Memorial Art Gallery. The gallery was given to the university by Mrs. James Sibley Watson of Rochester, daughter of Hiram Sibley (donor of Sibley Hall) as a memorial to her son, James G. Averell.

Interest in art as part of the university's curriculum can be traced to the days of President Anderson, who gave public and college lectures in the field and purchased art books for the library. At his death he bequeathed a notable collection of lithographs and etchings to the university. The university also had received, in 1879, a gift of illustrated art works, valued at $5,000, from Elias Lyman Magoon, a Philadelphia clergyman who was a well-known collector of books and connoisseur of art. All of these materials and other collections of art books and materials in the field of archaeology were transferred to the new gallery from Sibley Hall in 1913, and they were made available for college art classes and also for the research purposes of the gallery staff. A curator of books and prints was added to the library staff to administer this collection. The collections of the art library grew to a total of more than 14,000 volumes by 1955, when all but selected research materials were transferred to the university's coeducational library on the River Campus.

In 1915 the university decided to experiment not only with its first full-time librarian, but also with its first professionally educated head librarian. He was James Adelbert McMillen, a recent graduate of the New York State Library School, who

had gained some experience at the University of Missouri. Many university administrators of the day viewed library school-trained librarians with suspicion, doubting their scholarly background and their ability to cope with academic problems on the university level. Library education was relatively new and unproven at the time.

McMillen set out to allay these fears. He attacked the book collections, weeding out duplicates and useless materials, and he developed working collections of books and built up sets of basic periodicals. He pleaded with the trustees to do something about the inadequacy and congestion of Sibley Hall; but, although he received some response to his pleas, all plans for improvements were delayed until after the European war. More importantly, he directed his energies to attracting more funds. With the strong backing of President Rhees, he won the financial support of Francis R. Welles and Charles A. Brown, the two alumni who had earlier contributed to the library. Welles and Brown jointly subscribed an endowment of $100,000 and enlisted more subscribers for $25,000 each. The effect of this endowment was also delayed by the war, but in 1919 the income from all of these moneys was applied to library purposes. McMillen encouraged the use of a new interlibrary loan system, developed more bibliographical guides and indexes, and prepared bibliographical lists upon request of the faculty. One of McMillen's innovations was a course in bibliography. This he conducted in cooperation with the English faculty, which was enthusiastic about teaching new students the use of the library.

During McMillen's tenure the book collection grew to nearly 77,000 volumes and the annual book budget increased to $4,200. Much of his work was accomplished despite the hectic distractions of the war years, and despite his own military service in 1918. Yet, his librarianship had been so effective and impressive that the university administration forgot its prejudices and chose another trained librarian to succeed McMillen, who resigned to take a similar position at Washington University, St. Louis.

Donald Bean Gilchrist arrived at the university in 1919. He was a graduate of Dartmouth College and the New York State Library School and had been at the University of Minnesota Library. Before coming to Rochester he served as librarian of the American Peace Commission at the Paris Peace Conference.

The 20 years of Gilchrist's librarianship were years of amazing change and development in the university library—amazing when compared to the plodding growth of the previous 70 years. Under his leadership, the services became more sophisticated and extensive, and the collections became more scholarly and more voluminous. He guided the development of the main university library, and that of the Art Gallery, music, and medical libraries. At the same time, he planned the construction of a million-dollar library on the university's new River Campus.

Upon Gilchrist's arrival he discarded gently the suggestion that the university should limit its library collections to 100,000 volumes. He reported to President Rhees:

> The University has seen, in the last few years, an expansion in the fields covered by its curriculum. We have an Art Department which is growing and promises to grow larger. We have a School of Engineering which offers possibilities

> for development. We have a School of Music soon to be opened. We have a Department of Vital Economics which will search the whole field of medical literature in its studies and all these different departments, if they show the development which is expected, will make new and additional demands upon the Library. Should the Library be limited in size unless it is intended to definitely limit the University itself?
>
> The future may very properly see other departments spring into life in the same way, departments of which at present there is no premonition; and every good book which is discarded because it is outside the field of instruction at present covered by the University, may mean an extra purchase later.
>
> I believe that we must continue to discard material, but to limit ourselves at the present time to 100,000 volumes, or to set as a final, definite limit even a larger number, would mean, within a number of years, throwing away one book for every new book added. The time will never come, I believe, when this can be done. . . . (*10*).

As events have proved, Gilchrist understood his university and his library. As he once said, "There is not the slightest evidence to indicate early stabilization of higher education in America." In fact, during the 1920s two new university libraries were created under Gilchrist's direction. They were the Sibley Music Library and what was to become the Edward G. Miner Medical Library.

At the beginning of the 20th century Hiram W. Sibley, son of the university's early benefactor, started a collection of music for the benefit of music lovers of the city as well as for the college. The wisdom of such a collection was first suggested to Sibley by Elbert Newton, a prominent Rochester musician and bibliophile. Newton had a keen interest in "modern" music, literature, and art; and thus, when Sibley provided him with the money, he went to New York and bought widely of the works of then little-known composers such as Debussy, Ravel, Stravinsky, Rachmaninoff, Sibelius, Wolf, Reger, Malipiero, and Respighi. He also purchased the works of the better-known Classical and Romantic writers. Later, in 1918, Sibley provided more funds and Newton added another 6,000 volumes of books and music to the collection. All of these were deposited in the Sibley library on the Prince Street Campus. This extensive buying increased the collection to some 9,000 volumes by the time George Eastman established a music school for the university in the early 1920s.

The first plans for a music school did not include provisions for a library, but before school construction was completed, Eastman and Sibley agreed to cooperate in their two ventures and space was allotted in the new building for the library collection. In 1922 Sibley's collection was moved from the university campus to the Eastman School of Music.

This new arrangement was an incentive to Sibley to accelerate his purchases, and from the early 1920s until his death in 1932 he contributed approximately $75,000 for these purchases. In the first few years of the 1920s he purchased a number of important collections en bloc. The first was the library of Otto Sonneck, for two decades the leading musicologist in the United States. This contained many of the definitive scholarly editions of the great composers and also considerable bibliographical and critical material. There was the Kreiner collection of Russian folk

and liturgical music, which included many historical and critical works (largely European) relating to them. Then came the Fleming collection of rare and costly books on the history of musical instruments. A major acquisition was the 3,000-volume library of Arthur Pougin, French music critic, biographer, and collector. Later the library received the folklore collection of Henry E. Krehbiel, and then the original manuscript score of Sir Henry Bishop's "Clari; or the Maid of Milan," which first gave "Home, Sweet Home" to the world.

The music library was provided with its own building on Swan Street in 1937, having by that time about 37,500 volumes of books and music. By the 1960s the Sibley Music Library had 120,000 volumes. It also held some 25,000 uncataloged songs, sheet music, and pamphlets, and a significant collection of records, microfilms, microcards, and manuscripts. It now contains a quarter-million items.

The second new library to be created by the university under Gilchrist's direction was the medical library, established between 1922 and 1925 to serve the new School of Medicine and Dentistry. There were no basic collections upon which to build the new library. The only materials which the university had for possible use in a medical library were a few periodical sets for chemistry, biology, and physics. The medical library, as did the new school of medicine and dentistry, had to start from scratch.

The Rockefeller Foundation suggested that the university employ James F. Ballard, of the Boston Medical Library, as its purchasing agent and adviser for the medical library. Ballard had planned a library and purchased most of the books for the Peiping Medical College in China, and he had served as adviser for the Harvard Medical Library. In the process he had acquired an intimate knowledge of current European markets, and, therefore, he was able to prepare a model list of periodical sets for research and clinical needs. His suggestions were approved by Gilchrist and the heads of the medical departments.

Beginning with Ballard's purchases and supported by a continuing program of acquisition, the medical library accumulated almost 40,000 volumes in 12 years, spending a total of $168,635. Many important gifts also were received during this period. Notable gifts came from the Boston Medical Library, the Grosvenor Library of Buffalo, the New York Academy of Medicine, and Princeton University. An outstanding gift was that of 4,000 volumes from the Reynolds Library of Rochester, a transfer which was made possible with the approval of the Rochester Academy of Medicine, successor to a group of physicians that had originally collected the books. A dozen other medical libraries offered anything and everything from their duplicates, and many local and alumni physicians gave books and funds.

The medical library today has a number of important collections which have been donated over the years. In 1927 Edward G. Miner presented to the medical library 41 volumes on yellow fever. Miner's interest in the disease was stimulated by a trip to certain tropical countries which had suffered under the scourge of the disease, resulting in his desire to learn more about it. The material which he acquired became the nucleus of the present collection of more than 600 volumes, which includes books on yellow fever and cholera. It consists of original treatises on the origin, treatment, prevention, and cure of fevers; government reports; statis-

tical tables; contemporary newspaper clippings; and correspondence describing or mentioning fevers. It dates from the 18th century to the present time, with emphasis on epidemics in America.

The Edward Wright Mulligan History of Medicine Collection was the gift of the late Dr. Mulligan, former lecturer in surgery and consulting surgeon at the School of Medicine and Dentistry and at Strong Memorial Hospital. Not a collector himself, but interested in books illustrating the history of medicine, Dr. Mulligan made it possible for the medical library to purchase such volumes by contributing $5,000 a year for a period of 3 years, beginning in 1926. The selection of books was entrusted to the library committee, of which Dr. George W. Corner was the chairman. Interest in this section waned, but in 1965 it was revived and a History of Medicine Section was created and a curator appointed. It brought together the library's rare books, archives, reference volumes, general history collections, and Miner's fever collection. Moneys were then forthcoming. A grant was received from the Josiah Macy, Jr., Foundation for 1967–1970, and this provided for the creation of a professorship in the history of medicine, an oral history program, exhibits, and a reactivation of the George W. Corner Society. A $100,000 endowed fund also was willed to the library by Thomas S. Lamont, son-in-law of Edward G. Miner. Its income was to be used for the improvement of the History of Medicine Section. Benefactions of Dr. George H. Whipple, first dean of the medical school, were used for the improvement of the section. Half of a living trust income which was to benefit Dr. Whipple and his wife during their lifetime was allocated for the use of the History of Medicine Section. The Whipples also specified that upon their death the medical library was to receive the benefits of the income from the entire trust of $750,000.

In 1952 the library was named the Edward G. Miner Library in honor of one of the persons who was most interested in the development of the medical library. Miner, a Rochester industrialist, was at one time chairman of the university's Board of Trustees and had also served as chairman of the university library committee, aiding in the formulation of library policies and paying special attention to acquisition of scholarly books.

Very early in his administration, Gilchrist was given the responsibility of planning a new main library which would be one of a number of university buildings erected on the new men's campus at Oak Hill, on the Genesee River.

The institution, which during all of its early years had been a university in name only, was being transformed into a genuine university, and a more sophisticated physical plant seemed necessary. There also was the argument for two independent colleges, which would ideally provide the women with separate but equal facilities and education, once the men were resituated on the new River Campus. Having separate quarters for women, it was believed, would inspire more financial support for the education of women.

Like his predecessors, Gilchrist was nagged by problems of inadequate library facilities, and he welcomed the prospect of planning a new building: "We are particularly fascinated with the prospect of having a properly planned new building at Oak Hill, after occupying our present quarters for six years, squeezing in a

desk here, a thousand books there, getting tables a few inches closer together to make room for a few more readers." With his knowledge of the history of the university library, Gilchrist understood that his planning must be for years into the future, affecting not only the years of his administration, but also all of the succeeding years and different library administrations.

Sketches for the new building were prepared as early as 1921, and they were later developed in accordance with the general design for the River Campus. President Rhees and the trustees finally approved a $1,350,833 plan for the library building. It would provide space for a million volumes, or even twice that number with the construction of future additions. The location of the library was planned so that it would be in close relationship to the teaching buildings and also have adequate space for the development of the anticipated additions.

The new university campus for the college of men was formally dedicated on October 10–12, 1930. Gilchrist, who was primarily responsible for planning the general arrangement of the new library, described the striking architectural features of the building:

> The central part of the front facade and all the trim are of Indiana limestone, the remainder of Harvard brick. Above the main entrance is a classic portico of six Doric pillars, surmounted by a heavy, hand-carved stone pediment, showing a decorative group of four human figures, two kneeling and two seated, and two lions, centered about the University seal. . . . In the frieze across the front of the building are carved the names of Aristotle, Augustine, Descartes, Newton, Kant, Franklin, Darwin, Plato, Vergil, Dante, Goethe and Shakespeare. . . .
>
> The broad entrance steps are of granite, surmounted on either side by a large, ornamental stone urn, eight feet in height and decorated with scroll work in relief. On the face of the building back of these urns are carved, in five-inch letters, two inscriptions, as follows:
>
> "Here is the history of human ignorance error superstition folly war and waste recorded by human intelligence for the admonition of wiser ages still to come."
>
> "Here is the history of man's hunger for truth goodness and beauty leading him slowly on through flesh to spirit from bondage to freedom from war to peace."
>
> The main entrance consists of three sets of double, teakwood doors, with heavy plate glass panels, protected by decorative bronze grilles, incorporating early printers marks, and in the lower panels, the following inscriptions:
>
> "The doors of the past open to those who seek to know what has been—the history of the stars, the earth, sunlight, life and man's long journey."
>
> "The doors of the present open to those who seek to know what man can do—to master his fate by science sustain his spirit by art and guide his life by wisdom."
>
> "The doors of the future open to those who wonder what life may become—when men are free in body and soul loving all beauty serving in many ways one god."
>
> The entrance opens onto the mosaic marble floor of the main lobby or foyer, measuring 34 feet in width and 80 feet deep. The walls are finished in Indiana limestone and colonnaded with fluted stone pillars. Recessed between these pillars are exhibit cases. Above the exhibit cases on the left are bronze medallions of the Muses and in the stone lintel of the entrance to the Welles–Brown Room dedicated

> to the enjoyment of good books, is a carved head of Mnemosyne, mother of the Muses and Goddess of Memory. Above the exhibit cases opposite, medallions symbolize the various methods of recording human thought from Papyrus to Typesetting, and over the entrance to the required reading room is a carved head of Minerva, Goddess of Wisdom. At the rear of the lobby is the double grand stairway, having solid stone balustrades with early printer's marks of different periods and nations cut in the stone.
>
> Both reading rooms on the first floor measure 42 by 72 feet. The required reading room will accommodate 120 people and has an open shelf capacity of 7,000 volumes. The Welles–Brown Room, accommodating 5,000 choice volumes, has oak-paneled walls, a stained glass memorial window in a recess at the north end, a fireplace, comfortable furniture and other luxurious accoutrements of a private club. The expense of furnishing and equipping this room was borne jointly by two alumni, Francis R. Welles, '75, and Charles A. Brown, '79 (*11*).

The second floor was the working floor of the library. The high-ceilinged main reading room extended across the greater part of the front. The public card index and loan department were located at the rear of the stair hall. On the south side was the periodical room; and on the other side, and extending to the rear of the building, was the administrative division, including staff offices, cataloging, and order departments.

In the stair hall at the second-floor level there are two larger than life-size statues, one of Minerva in full regalia, symbolizing knowledge, and one symbolizing industry. The great granite statue which represents industry first held a camera in her left hand, probably someone's idea of a suitable tribute to George Eastman, the Kodak multimillionaire whose generous gifts had benefited the university. But even Eastman thought this gesture a bit incongruous, and the camera was recarved into the lamp of knowledge.

Always the most imposing feature of the building has been the library tower, 19 stories, 186 feet high. Its upper portion is encircled by two graduated tiers of stone pillars, the lower of which constitutes an open colonnade, illuminated by almost 200 floodlights. In the summit of the tower is the Hopeman Memorial carillon of 50 bells.

The fine, new library, named for President Rhees, attracted worldwide interest and visitors. Representatives from many institutions visited, carefully taking notes as they examined the new building. They included delegations from: the Bodleian Library Commission; the University of Oslo; the University of British Columbia; the Public Library of Stockholm; the University of Arkansas; and from Cornell, Princeton, Wellesley, Northwestern, and many other institutions.

Gilchrist was concerned with the development of collections and the building of the library, as well as with the encouragement of gifts and the development of techniques of librarianship. Throughout all his efforts, his underlying assumption was that "service is the reason for a library, and the chief emphasis in appraising the value of its library to the University should be placed on the extent to which it [the library] has, can acquire, and can make conveniently available, the books and information wanted" (*12*). Gilchrist knew, however, that service must be supported by more intelligently developed collections. In 1925 he initiated a new general

fund to be known as a "research fund," to be used for extraordinary purchases such as current or out-of-print books for new courses, for back sets of periodicals, or for sets of source materials in a specific field for advanced research work. This fund was to be controlled by a faculty library committee, acting upon the recommendations originating with the heads of departments or the librarian.

During his tenure, Gilchrist encouraged increased use of the library. One of his innovations was the use of reserved books to facilitate the most efficient use of a limited number of books assigned to large classes. Although he closed the stacks to students when he first arrived, he later reopened them, although on a limited basis, and he decided that the freer use of the collections was generally beneficial to the students' work. He sought to create interest in the collections by publishing a newssheet called the *Fortnightly Bulletin,* which carried notes on books and on aspects of library service. One of the new features described in 1925 was a fountain pen-filling station where students could fill their pens for a penny. Gilchrist reported that the reason for its installation and the charge was that "during the last college year the library had to buy nine gallons of ink to keep our assiduous clients supplied . . . we have a feeling that our money might better be spent for books" (*13*). Gilchrist promoted periodic exhibits and a series of programs on literary or bookish subjects in the Welles–Brown Room. Writing under the pen name of Henry Pyecroft, he also contributed a series of chatty, informal columns on books and literary figures to the student newspaper.

When Gilchrist first arrived he noted that the great increase in library accessions had strained the system of classification of books to the breaking point. For its first three-quarters of a century, the library used locally devised classification systems, except during a period in the 1890s when the Dewey Decimal Classification received limited use. The last local system, broadly based on the curriculum, was devised in 1900 by two faculty members. It was used until 1927 when, in anticipation of the rapid growth of the library because of the forthcoming move to the River Campus and the creation of a separate library for the College of Women, the Library of Congress system, with some modifications, was adopted. Work on reclassification of the collection was begun in 1927 and completed in 4 years.

In Gilchrist's first year as librarian, 1919, he reported a total of 81,500 volumes in the collections of all the university libraries. There was a total annual circulation of 47,000 volumes and a total annual budget approaching $20,000. In 1927 the whole university had a collection of 152,000 volumes, of which 100,000 were in the main library, the others in the music and medical libraries. Total circulation was 160,000, and there was a greatly expanded budget of $93,000. In his last annual report, for the academic year 1938–1939, Gilchrist reported a total library collection of 345,522 volumes and a circulation figure of 315,125. The budget had reached a new high of $123,547. These increased funds for library operations were indicative of the university administration's interest in and support of its library. University Treasurer Ball, in 1925, reported that the university was spending 9.72% of its total budget for library purposes, which was an expenditure per student, based on 835 students, of $46.34.

Gilchrist died unexpectedly in 1939 and a search for his successor was initiated.

In the interim, Professor Slater, who was chairman of the library committee, assumed direction of the library, a move which once again illustrated the faculty library committee's deep involvement in the affairs of the university library. This active concern with the library had developed in the 19th and early 20th centuries when the faculty library committee was more often than not charged with the administration of the library. Even after the appointment of professional administrators, the library committee kept fully informed on library matters and met often with the librarians to discuss and approve the specifics of the library budget and operational procedures. The faculty committee was still vitally concerned with library matters as the 1940s opened, and a few years after Professor Slater served as librarian, another English professor, Richard L. Greene, directed library operations during the librarian's illness. The task of finding a new librarian in 1939 was the responsibility of the library committee, and early in 1940 President Valentine announced the appointment of John Richmond Russell.

Russell, who had degrees from the University of Chicago and the University of Michigan, had worked at the Michigan library and the New York Public Library, and had been chief of the Division of Cataloging of the National Archives in Washington. Russell was to face not only multifarious problems created by the rapid expansion of the university curriculum and the libraries during the 1930s, but also those created by the impact of World War II.

The war naturally affected the work of the library both directly and indirectly. It was extremely difficult (if not impossible) for most of the war years, to obtain foreign books and periodicals. There was also the problem of physical security for library collections. One of the first undertakings of the library after the United States entered the war was a survey of library collections to determine which materials should be moved to places of greater safety. The two vaults in Rush Rhees were chosen as the safest storage places, and the manuscripts and most valuable books were carefully arranged there. Other materials from the music, medical, and art libraries were moved to the same vaults. Plans were also prepared for moving valuable reference sets, the official catalog, and the shelf list should bombing seem imminent.

In addition to these plans for protecting library materials, members of the staff were involved in operations designed for the protection of the readers and staff in the event of an air raid. Some were appointed as building wardens, fire watchers, air wardens, and couriers. Others took first aid courses to prepare for emergencies in which staff and library patrons might be injured. The library began to build up a collection of books on defense and civilian morale long before the attack on Pearl Harbor. Later the library became a War Information Center. Librarians collected materials for radio broadcasts sponsored by the center, and the library accumulated great amounts of pamphlet and book material for use by the center. The library also assisted in the collection of books for the Victory Book Campaign, for distribution of books to American soldiers and sailors, and it gave advice and assistance to Rochester industries engaged in war and defense activities.

The library established an Educational Film Service which, during the war years, was to provide to great numbers of individuals, schools, and organizations in

Rochester and western New York extensive visual information on the meaning of the war. By September 1943, more than 60,000 persons had viewed these films, which were supplied by agencies of the United States government and by American industries. By the time the film service was discontinued in June 1946, after 4 years of operation, it was estimated that approximately 250,000 persons had seen the films each year.

The library staff provided new services for the 800 men of the Navy V-12 unit when it arrived on the River Campus in July of 1943, keeping the library open to 10 P.M. weekdays and providing some Sunday service. Considerable reference service was provided for the naval students; and the reserve reading room, which had been closed because of staff shortages, was reopened for use as a study hall for the Navy men, under the supervision of Navy staff. More recreational reading was provided for the trainees, and the entire library building and its tower were regular ports of call for trainees when entertaining their families and friends on tours of the campus. The library was doing its best to make the young men feel welcome, and at one time serious consideration was given to a plan for adapting the library's first floor reserve reading and lecture rooms for use as dormitory space. It was estimated that 300 men could be accommodated in those two library areas.

The war years hurt the university budget and, in turn, the library budget. Staff salaries were not cut, but they were kept at such a low level that adequate and able staff could not be attracted to the library. There were repeated urgings from university administrators to limit expenses. Treasurer Raymond L. Thompson pleaded for a 10% saving in operational costs, suggesting to employees that they turn off lights, turn off faucets, turn off radiators, conserve paper (typing the file copy of an answer on the back of letter received), and when using the telephone, "cut your conversation short!"

The library was also put to some strange and wonderful uses during the war. In September 1943, a cafeteria was opened in the library basement. The cafeteria advertised breakfast for 30 cents, lunch for 50 cents, and dinner for 75 cents. It also appealed for the business of special dinners and banquets. Much to the relief of the librarians, who were grim about the cooking smells and the sight of cockroaches and rats that were attracted to the building, the cafeteria was closed in November 1944.

Considerable library space was devoted to experiments related to war research programs. The tower was used by the Psychology Department and by the Optics Department for lighting experiments. The Physics Department conducted some of its work in a third-floor storeroom. The optics shop moved into the library basement (and stayed there until the 1960s), and one psychology professor used an elevator shaft for his work on sea sickness.

Another unusual tenant in the library was one of the male librarians. For health reasons the librarian would not have been able to continue work in the library if he had to live off campus. Russell recommended to President Valentine that because the librarian was an essential employee and because of the extraordinary conditions created by the war, the librarian be allowed to live in a fifth-floor study until some other space could be found for him.

Most trying to the librarians may have been the operation of the university switchboard, in tiny quarters adjacent to the reserve reading room on the first floor of the library. Before the war, university authorities thought nothing of asking young women on the library staff to take turns operating the switchboard to relieve the regular operators on noon hours. During the war, however, the administration asked for more and more overtime work on the switchboard, and Russell's patience was strained. His solution, until the day this practice was abandoned, was to have the library staff operate the switchboard as part of their regular hours instead of on an overtime basis.

Many of the librarians, of course, contributed much of their own time to the war effort. One of the projects in which several of them participated was to help harvest local farm crops. The late Arthur J. May (history professor and later university historian) often told about how a delegation of women librarians presented themselves for work at a tomato farm on which university professors had previously worked. According to Professor May, "The farmer eyed them warily and blurted out that he didn't know whether he ought to allow the ladies to gather his crops, because all his workers before had been Ph.D.'s!" (*14*).

In 1940, before the full impact of the war was felt, the total enrollment of the university was 5,208, with 660 men on the River Campus. The River Campus enrollment dropped to 483 in 1943, and to a low of 250 before the war was over. For many of these students, who were to face induction into military service, accelerated programs were instituted, which were generally geared to standard undergraduate subjects. Candidates for graduate degrees declined sharply after Pearl Harbor. During the war registration in the graduate schools sank to less than 300. In 1943 only seven Ph.D.'s were conferred and they were all in the natural sciences. In 1944 seven doctorates were awarded in the sciences and one in music; and in 1945, only six of these degrees were conferred. While the pressures mounted on the library to provide supporting materials for the accelerated undergraduate programs, there was a lessening in the demand for materials to supply the needs of advanced research.

In the late 1940s President Alan Valentine pushed for increased faculty appointments in scholarly specialities, with a view to preparing for new doctoral programs. The various faculties approved an increasing number of new and especially advanced courses, and there were additional pressures from the government, the military, and Rochester industries for research projects. By 1951, 24 Ph.D.'s were conferred, all in the sciences and music, however. But a doctoral program for history had been approved, and there was a growth in graduate work in education, business and economics, and physics and engineering. In the academic year 1950–1951, 30 departments in the university were offering graduate work, with 668 candidates enrolled, 415 in the master's program and 253 in the doctoral. The year 1950 marked the 100th anniversary of the university, and it was noted by those interested in developing the graduate schools that only 2,423 master's degrees and 310 doctorates had been awarded in those 100 years.

All of this activity created acquisition and service problems for the library, problems which were to mount in their severity as the university broadened its horizons

and expanded its curriculum throughout the 1950s. First, however, Russell was concerned with the library's recovery from the effects of the war. The end of the conflict did bring some improvement in the availability of scholarly materials, especially foreign materials. Periodicals and monographs published during the war years and since the end of the war in Germany, France, Italy, Belgium, and the Netherlands arrived in increasing numbers. The Library of Congress made arrangements for the library to get from Germany the back volumes of periodicals to which the library had subscribed during the war but had not received. An agent was engaged to make contacts throughout the European countries for other materials which were essential to a scholarly collection but which had been unobtainable.

With the war over and his first 10 years at the university coming to a close, Russell faced serious problems with library staffing and space. He had grappled with these problems during the war years, concentrating his efforts on raising the level of salaries and creating new areas for the storage of books, especially in the Women's College Library. The increasing number of students, especially those attending University School sessions, put tremendous pressures on the facilities of the women's library. Russell urged that a campaign be started to obtain additions to the buildings, or to build completely new structures for the Women's College Library and for the art and medical libraries.

During the 1940s Russell initiated new programs to improve the cultural aspect of the libraries. In the fall of 1945 he launched a new library publication, *The University of Rochester Library Bulletin*, which replaced the *Fortnightly Bulletin*, an essentially informal publication. The new bulletin was edited by and written, in part, by Russell. Over the years the *Bulletin* contained scores of interesting articles based on the significant book and manuscript collections of the university libraries. Another of Russell's successful innovations was a weekly series of coffee hour discussions for students in the Welles–Brown Room. Books and current topics of interest were discussed by a series of prominent speakers, and refreshments were served.

In Russell's first decade, the collections were expanded considerably despite the severe limitations imposed by the war. When Russell arrived in 1940 the university libraries had a total of 376,660 volumes in their combined collections. In 1950 the total was 514,575. The growth was carefully spread throughout the system. In 1940 Rush Rhees library had 216,133 volumes; in 1950, 296,190. The Women's College Library grew from 60,033 to 86,227; the Art Library, from 8,062 to 11,556; the Sibley Music Library, from 45,200 to 63,578; the Medical Library, from 46,453 to 55,637; and the School of Nursing Library, from 779 to 1,387.

Russell's library budget also increased notably. In 1940–1941, the total budget was $108,838. Four years later the figure was up to $151,111, with $91,760 for salaries, $43,200 for books, $10,100 for binding, and $6,057 for other expenses. The 1950–1951 figures showed a total budget of $247,270, of which $150,364 was spent for salaries, $66,950 on books, and $14,100 on other expenses.

As the university entered the 1950s it chose a new president, Cornelis W. de Kiewiet, and it elected to combine its men's and women's colleges on a single campus. It was under de Kiewiet's leadership that the image and character of the uni-

versity changed vastly in the decade of the '50s, from an essentially undergraduate institution to one with a growing concern for graduate teaching and research. At an extremely rapid pace, there was a growth in postbaccalaureate commitments; and before the merger of the two colleges was fully completed, professional colleges of engineering, education, and business administration were instituted. President de Kiewiet and other university leaders pressed for additional programs in these specialities, and also for the development of new and advanced programs in the humanities and social sciences. Curriculum offerings were also enriched by the introduction of special studies on Canada and the non-Western civilizations. All of this activity was given impetus by new faculty appointments in special fields, and by financial grants from government agencies, foundations, and industry. The full-time faculty at the River Campus nearly doubled, and 90% of the entire teaching staff held earned doctorates. By the end of the decade there were 1,200 full-time graduate students enrolled, almost double the number of 1950. These developments and special programs in turn created new demands on the library system; and Russell reported increased buying, not only in Canadian and non-Western civilization studies, but also in anthropology, brain research, medical engineering, education, English, economics, Russian history, and many other areas. In addition to these pressures for new purchases, Russell had to stretch his book budget to cope with the postwar explosion in book publishing.

When plans were made to merge the two university campuses in 1955, abandoning the Prince Street campus for women, Russell initiated his plans for the transferral of books from the Women's College Library to Rush Rhees, and for the expansion of Rush Rhees to accommodate the approximately 100,000 volumes to come from Prince Street. To prepare for these additional volumes, the university provided funds to equip seven more levels in the River Campus library stacks, and to install a second elevator to serve the increased stack space. The library's total book capacity was thus brought to more than 600,000 volumes. For a brief time it was thought that this expansion would provide adequate library space. Russell and two faculty members estimated that "our space will last eleven years." What these three men did not anticipate was that in the years immediately following the merger the collection would grow by between 20 and 25 thousand volumes per year, instead of by only 15,000, as they had estimated. They also had hoped that certain nonlibrary departments using space in the library would be moved to other buildings, but that hope was not to be realized. It appeared that there would be an earlier day of reckoning in regard to new library expansion, and by 1960 Russell told President de Kiewiet that a library addition would be a "necessity within five years."

The 1950s also saw for the first time the formal creation of a department for the care and service of the library's growing collections of significant rare books, historical and literary manuscripts, local history books and manuscripts, and the University Archives. This unit was then known as the Department of Special Collections. Starting in 1969 it was referred to as the Department of Rare Books, Manuscripts and Archives.

Little had been done in the first 70 years of the library's existence to actively

collect rare books and manuscripts. Rare books and manuscripts in the library's possession were acquired piecemeal, by gifts presented through the years. Also, little had been accomplished in establishing a formal program for the care and preservation of archives. Archival materials were accumulated somewhat casually and stored in university attics and basements.

Gilchrist had instituted the first directed changes in the acquisitions of these materials during his administration in the 1920s and '30s. One of his concerns was with the trend toward dispersal of local history collections outside of the Rochester area, some going to New York City and Washington, D.C., others being scattered through public auction. To prevent this, Gilchrist started to purchase local history collections of books and manuscripts, and he encouraged the acquisition of others by gift.

After 1930, with a new library and its physical facilities for the care of rare books and manuscripts, Gilchrist devoted much time to encouraging friends of the library and alumni to give their significant book and manuscript collections to the library. He also initiated the organization and cataloging of some of the archives, and he appointed part-time assistants for archives and rare books and literary manuscripts.

Thus, a start had been made in collection and preservation by the time Russell was appointed librarian in 1940. Russell, who was experienced in archival work, soon recommended that archives be given official status in the library. A series of archival regulations, which made the library the official depository and which designated the director of libraries as the archivist, was then approved by the Board of Trustees.

An active program for collecting historical manuscripts was carried on in the 1940s by President Valentine and by Russell. The two men, with the assistance of Glyndon C. Van Deusen, professor of history, wrote and visited many people in the Rochester area, New York State, and in other parts of the country, who had collections of historical significance. Russell continued this policy in the 1950s and 1960s and attracted to the library, manuscript collections important to the study of 19th- and 20th-century social and political history, along with fine acquisitions in literary and theater manuscripts and rare books.

Among the most significant collections held in the Department of Rare Books, Manuscripts and Archives are the public papers of William Henry Seward, Thurlow Weed, David Jayne Hill, Susan B. Anthony, Thomas E. Dewey, Marion Folsom, and Kenneth B. Keating; and the scientific papers of Lewis Henry Morgan, Herman LeRoy Fairchild, Henry A. Ward, and Carl E. Akeley. There is considerable material relating to Robert Southey and 19th- and 20th-century theater manuscripts; and also to the history of settlement and land development in New York State, to Indians, to early upstate printing, and to upstate industry and business. Papers also are preserved for Rochesterians Adelaide Crapsey, noted American poetess, and Claude Bragdon, widely recognized architect and stage designer.

All of the library's collections were acquired and developed by Russell without the benefit of a major source of income devoted to rare books and manuscripts. One of the few funds Russell did have to work with was one contributed by Mrs. Charles Hoeing, who in 1941 began a series of gifts to provide a special collection

of rare books in memory of her husband, former dean of the College for Men. Not until the mid-1960s did the library have the benefit of endowed funds specified for the collection of rarities. Some of these moneys were part of funds established by the estate of George F. Bowerman, a personal friend of Russell's and former librarian of the Washington, D.C., public library; by the estate of Vera Tweddell, former circulation librarian of the University of Rochester; and from a university fund established by Trustee and Mrs. Joseph C. Wilson.

As he surveyed the condition of the university libraries in 1960, Russell may have been reminded of a bookman's comment that:

> the most conspicuous feature of our college library service . . . has been its devoted sacrifice. Librarians have been making bricks without straw . . . have been all things to all men, but with the usual result of satisfying no one—themselves included. . . . Most conspicuously have the librarians of colleges been obliged to lag behind . . . chiefly because of lack of funds. . . . (*15*).

The years had taken their toll: the severe restrictions of the war years of the 1940s and '50s, the impact of the merger, and the meager annual budgets—plus rising prices and living costs—had combined to hamper the growth of the library. Library buildings were beginning to show their inadequacies; in only a few years the lack of library space for books and readers would be critical in the medical and music libraries and in Rush Rhees. Staffs were inadequate and far too scanty to meet the demands of the fast-developing academic and research programs and the increasing undergraduate and graduate enrollments. Russell, who had made do with all of these inadequate resources for 20 years, voiced his alarm, and in the ensuing years he doggedly persisted in his efforts to create new building programs and to bring about an upgrading of library funds.

As each year of the early 1960s passed, the desperate space situation in all library buildings became more and more apparent. In 1961 the total holdings of the library system amounted to 721,119 volumes. From 1962 to 1967 the number of volumes in the library system increased from 749,217 to 1,048,429, not counting the multiplying of the library's holdings in manuscript collections and uncataloged government publications. Space for readers dwindled as enrollments rose.

Between 1962 and 1965 there was some success at Rush Rhees and the Medical Library. An addition to the Medical Library was completed in 1962. At Rush Rhees some space being used for nonlibrary purposes was converted to library use. A small addition was constructed to house the offices of the president, the provosts, and their staffs, but this was reassigned to library purposes. A storage library was established, which was soon filled with some 50,000 volumes from Rush Rhees library. And in 1964 work began on a preliminary building program for Rush Rhees library. There were budget improvements too, notably in the book budget, which was boosted from an awkward low of $83,700 in 1960 to a more flexible $200,700 in 1965. However, all was not on the bright side; the space situation at Sibley music library was still critical and continued in that state throughout the 1960s, and the science libraries on the River Campus outgrew their accommodations.

The university administration had opted in favor of a building addition to Rush

Rhees instead of an entirely new structure, and at last, in 1965, the firm of Murphy and Mackey of St. Louis, architects, was chosen for the addition and remodeling projects. Their plans were completed in November 1966, and ground for a $7,000,000 addition to Rush Rhees library and a remodeling project was broken in February 1967. The following 2½ years were a series of such routine hazards as dirt, noise, relocations, fires, floods, excessive heat, and chilling cold; but the library staff, the students, and the faculty valiantly attempted to conduct business as usual. There was despair, but by the spring of 1969 there were obvious results, and various library departments began to move into new quarters. All of the departments were relocated by the end of 1969 and all initial furnishings were in place.

The story of the 1960s was not all space problems, construction, and money, however. There were other developments, possibly just as significant, in the areas of automation and cooperative library programs. Russell, aware of the demand for more sophisticated library operations and techniques, established in 1966 an Information Systems Office which was to be concerned with any methods, equipment, theory, or practice involving mechanization or improvement of library functions through the use of modern scientific and technical approaches. Technological advances were also noticeable at the Medical Library, where that library system was linked via leased telephone line and IBM communication terminals to 11 other medical libraries in the State University of New York Biomedical Communication Network, the system providing a computerized information retrieval system. Russell also saw to it that the community served by the University of Rochester libraries was greatly expanded in 1966 and 1967 by virtue of the library's joining in two new cooperatives, the Rochester Regional Research Library Council and the Five Associated University Libraries.

John Russell retired in 1968 after 28 years as director of the University of Rochester libraries. Though his years were marked by struggle in the face of low budgets, shrinking library space, and inadequate staff, he was a make-do man in the same sense as were the early founders of the university—he created from very little the essentials of a fine university library. Despite budgets which at best could be described as barely adequate, he patiently applied what funds he did have in such a fashion that depth was added to the collections, making them more responsive to the increasing research and scholarship of the university. His active role in attracting friends for the library was rewarded by the accumulation of a great number of gifts, particularly in the area of rare books and manuscripts, which provide original source materials so essential to advanced students in many fields of study. He surrounded himself with able librarians, he developed their interest in professional education and methods, and he fought for their increased salaries and benefits, inspiring an unusual degree of loyalty and respect from them.

His vacancy was filled by the appointment of Ben Cook Bowman, formerly chief librarian at Hunter College in New York City. Bowman, a native of California, was educated at the University of Oregon and the University of Chicago. From 1948 to 1961 he was on the staff of Chicago's Newberry Library, where he was head of the reference department and later assistant librarian. In 1961 he was appointed director of libraries at the University of Vermont and from there he went to Hunter College.

During Bowman's 7 years at Rochester new directions were set for utilizing computer technology and in collection development. The library, through its affiliation with the Five Associated University Libraries, contracted with the Ohio College Library Center for its computerized cataloging services, and in 1976 it developed new information retrieval capabilities by utilizing machine-readable data base services in the many academic subject areas.

In the 1970s reference librarians and other staff were assigned bibliographic areas of responsibility for book selection. A collection development officer was appointed, to coordinate their efforts in these new activities.

Also during this period, considerable effort and interest on the part of the staff was devoted to a management self-study as part of the Management Review and Analysis Program of the Association of Research Libraries.

Finally, with Bowman's support, the many persons who had demonstrated an interest in the university libraries over a period of years—during which they had contributed to the libraries' development and collections—were formally organized as Friends of the University of Rochester Libraries.

Bowman retired as director in 1976. For the next year and one-half the university conducted a nationwide search for the new director. Finally, in December 1977, Alan Robert Taylor, associate librarian at Johns Hopkins University, was appointed to succeed Bowman.

Taylor, a native of England, came to the United States in 1963 as librarian for African Studies at Indiana University. He also served as bibliographer and instructor in the African Studies Program and as visiting lecturer at Indiana's Graduate Library School until 1973, when he became assistant director of libraries for reader services at the University of Maryland. He went to Johns Hopkins in 1974. After completing library studies in England in 1953, Taylor had become assistant librarian of the National Archives of Rhodesia and Nyasaland in Salisbury, Southern Rhodesia, and he was chief librarian from 1956 to 1963.

REFERENCES

1. John Rothwell Slater, *Rochester at Seventy-five*, The University of Rochester, Rochester, New York, 1925, pp. 4–5.
2. Quoted in Jesse Leonard Rosenberger, *Rochester, the Making of a University*, The University of Rochester, Rochester, New York, 1927, p. 60.
3. Ezra Job Fish, "[Report] To The University Board, April 4, 1853," Librarians' Papers, Department of Rare Books, Manuscripts, and Archives, Rush Rhees Library, The University of Rochester.
4. Martin Brewer Anderson, "Annual Report, 1865," Anderson Papers, Department of Rare Books, Manuscripts, and Archives, Rush Rhees Library, The University of Rochester.
5. *The University Record*, February 1876, p. 52.
6. Martin Brewer Anderson, "Annual Report, 1882," Anderson Papers, Department of Rare Books, Manuscripts, and Archives, Rush Rhees Library, The University of Rochester.
7. H. K. Phinney, "Report for the Year Ending June 1, 1891," Librarians' Papers, Department of Rare Books, Manuscripts, and Archives, Rush Rhees Library, The University of Rochester.
8. *The Campus*, January 13, 1898, p. 12.
9. Henry F. Burton, "The Report of the Acting President," in *The Report of the President of the University of Rochester and the Report of the Treasurer, 1908–1909*, Rochester, 1909, pp. 37–39.

10. Donald B. Gilchrist, "The Report of the Librarian," in *The Report of the President and the Report of the Treasurer, 1919–1920,* Rochester, 1920, pp. 31–32.
11. Donald B. Gilchrist, "The Rush Rhees Library at the University of Rochester," *The Library Journal,* April 15, 1931, pp. 343–345.
12. Donald B. Gilchrist, "Annual Report of the University Librarian, 1931–1932," in *Annual Reports of the President and Treasurer,* The University, Rochester, New York, 1932, p. 90.
13. Fortnightly Bulletin, November 10, 1923, p. 1.
14. Arthur J. May, personal communication to the author.
15. William Warner Bishop, *The Backs of Books and Other Essays in Librarianship,* Williams & Wilkins, Baltimore, 1926, pp. 213–214.

BIBLIOGRAPHIC SOURCES

The basic history of the University of Rochester libraries is: Catherine D. Hayes, "The History of the University of Rochester Libraries—120 Years," *The University of Rochester Library Bulletin,* **25**(3), 59–122 (Spring 1970). Still useful for the earlier period is: Donald Gilchrist, "The University of Rochester Libraries," in the Rochester Historical Society, *Publication Fund Series* (Rochester, N.Y., 1937), Vol. 16, pp. 101–134.

Two recent histories of the semiautonomous parts of the library system are: Henry L. Lemkau, "Crossroads: The Story of the Medical Library," in *To Each His Farthest Star, University of Rochester Medical Center, 1925–1975* (Rochester, N.Y., 1975), pp. 145–161; and Ruth Watanabe, "The Sibley Music Library of the Eastman School of Music, University of Rochester," Music Library Association, *Notes,* **33**(4), 783–802 (June 1977).

Useful primary materials for the history of the library system include the reports of the director of libraries, some of which (1899–1950) are in the printed *Annual Reports of the President and Treasurer,* while later ones are available in typescript form in the University of Rochester Archives in Rush Rhees Library. Also available in the archives are the papers of the presidents of the university and the papers of the directors of the libraries, as well as other manuscript and printed material relating to the history of the libraries.

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