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ANTHONY RALSTON, The Library Lobby

ELIZABETH W. STONE, Quest for Expertise: A Librarian's Responsibility
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A Proposal for a National Institute of Library Science

It is an interesting, if depressing, paradox that the library profession whose raison d'être is the conservation of knowledge permits so much of its own cumulative experience to slip away unrecorded and without possibility of recall. I refer to the fact that as yet we have not utilized the medium of television to preserve important aspects of the careers of a relatively small number of leaders of the profession who have played crucial roles in the development of library services at all levels over the past three to four decades. These are the individuals whose intellectual energies, personal charisma, and dedication have moved libraries in the direction of network for the acquisition, bibliographic control, and dissemination of knowledge on a global scale.

The published research of this group is, of course, available. At its best, it represents their cumulative experiences refined and purified through a critical dialectic. At its worst, it is similar to much of library literature; descriptive, pedantic, and dull. And herein lies another paradox. Although library literature on the whole is deadening, many of the people who produce it and the issues it reflects are exciting and intellectually challenging. Modern technology, specifically television, provides the means of recording what the literature often only hints at—or misses completely—the personalities of the leadership of the profession and the atmospherics of the professional environment in which they have labored.

The burden of this editorial is to make a plea for the establishment of a National Institute for Library Science whose sole function would be to use the medium of television to preserve that which is now being lost: the unique and creative personalities of the profession. Taped seminars analogous to those moderated by David Susskind might be a fruitful approach. No formal speeches, lectures, no bull sessions, but true seminars bringing together the leaders of the profession and moderated in such a manner that the focus is continually on the historical, immediate, or future problems and issues facing the profession.

The possibilities for individual seminars are legion, but one in particular leaps to the forefront—an exchange of ideas between Seymour Lubetsky and several of the people whose views carried the day in the writing of the Anglo-American Rules for Descriptive Cataloging. What a shame it is that death has made impossible a seminar featuring Joe Wheeler and the opponents of cataloging-in-source.

A program such as this sustained over a long period would result in several contributions to librarianship. First, by making the video
tapes, or kinescope copies, available to the library schools, all instead of a lucky few enrolled in our graduate programs could be exposed to the personalities of some of the best of our practitioners and theorists and witness important issues discussed at the highest possible level. Second, if used properly, the taped programs could substantially reduce the number of large lecture classes now offered by the library schools and in so doing help create an environment which more closely approximates graduate education in other disciplines. Finally, the taped seminars would serve as an additional link between past, present, and future generations of librarians, preserving the unwritten thoughts, the unwritten flights of imagination, the humor and the tenaciously held disagreements in principle between men and women of good will engaged in a crucial enterprise.

Funding for a National Institute for Library Science could come from a number of sources, foundations, professional associations, or the Council on Library Resources. Ideally, however, it would make sense for the major portion of the funding to come from the library schools themselves whose programs would be so immeasurably enriched by the institute’s activities. A yearly contribution of $2,000 from each of the accredited schools would produce approximately $100,000 and would provide each of them with the services of an ever-expanding adjunct faculty representing the leadership of the profession for a fraction of the annual salary of a single assistant professor.

H. WILLIAM AXFORD
University Librarian
Arizona State University
The Library Lobby

The importance, function, and utility of a university library is considered from the (jaundiced?) viewpoint of a computer scientist. The library is examined as partly a university-wide resource and partly as a research facility analogous to laboratory equipment in order to draw some conclusions about whether resources allocated to university libraries are appropriate. The position and breadth of use of the library relative to computing facilities is also considered as is the cost and value of library usage in relation to computer usage.

"The college library should be the most important intellectual resource of the academic community" ("Standards for College Libraries," CRL, July 1959, p.274). In 1959, when this was written, the library was almost the only general intellectual resource at a college or university. Computers were barely beginning to be important at universities and the battery of instructional communications gear so familiar today was not a major factor on most campuses. Today, the library is still the most important resource of the academic community. I emphasize this point at the outset to try to avoid misunderstanding later. But the question is: Is the college or university library as preeminent as the library lobby—the librarians, accreditors, and their allies—would have us believe? If it is still the most important academic resource, how long will this be true? Is the portion of the university budget devoted to libraries in relation to the other academic resources reasonable? Most basic of all: What is the utility—if one can dare to talk in such terms—of most of the holdings of a university library?

My general thesis is that relatively, if not absolutely, the value of much of university libraries is overrated and that, particularly in times of dwindling resources, the university library must no longer be considered sacrosanct, that its claims on the university budget need to be questioned as much or more than competing claims.

The Library Lobby

The power of the library lobby manifests itself both actively and passively. On the active side I had a glimpse of the power recently when I spent two days at a new, small college as a consultant on computer education and computer usage problems. It was depressing but not too surprising to find that the computing budget was negligible, particularly when contrasted to a library budget twenty to thirty times greater. Although there was a lack of perception of the present and growing importance of computers in all phases of the academic process, this was not the main reason for the relative sizes of the computing and library budgets. Rather, the college is hell bent for accreditation and thus is forced to give high priority to building the 50,000-volume collection necessary for accreditation.

Mr. Ralston is chairman of the Department of Computer Science of the State University of New York at Buffalo.
Another positive indication of the power of the library lobby may be found in the budget of the State University of New York and likely other public institutions also, where the appropriation for the libraries at the various campuses is a line item separate from the rest of the budget for the State University. Although such special treatment could cut both ways, in practice, there is no question that this treatment works for the benefit of the libraries by cushioning them from budget competition with the rest of the university.

Recently (March 1971) in the Communications of the Association for Computing Machinery there was an article reporting on a meeting last fall in Houston of the ACM Special Interest Group on University Computing Centers to discuss the problem of resource allocation and charging for use in university computing centers, a topic of no small interest to academic computing people in times of level or declining university budgets and declining federal support. A main point of debate at this meeting was whether a college or university computing center should be run on the bookstore model (charge users for all services, either directly or through departmental budgets) or the library model (let the computing center be a free resource for all without external funding up to the capacity of the facility). The arguments on the two sides are not relevant here. What is relevant is that one never seems to hear arguments about operating a library on the bookstore model! Charge every student or faculty member for every service including borrowing a book? Or, let each department have a budget for library usage against which each transaction would be charged? Perish the thought! The value of the library in the educational process cannot be measured by such techniques as charging for services. Or can it?

THE THREE FACES OF UNIVERSITY LIBRARIES

One of the barriers to appropriate perception of university libraries is its description as a general intellectual resource for the entire university community. Such a description is in fact much more applicable to a university computing center in which all users make use of approximately the same set of resources—the computer and its associated peripheral hardware. But only a minor portion of a university library—that part which serves general undergraduate education—contains resources used by a wide variety of people. Most of the remainder of the library consists of:

(1) Departmental fiefs, sometimes but rarely used by anyone except faculty, graduate students, and undergraduate students in one or, at most, a very small number of departments; and

(2) individual research fiefs where the book holdings and perhaps periodical back issues and subscriptions also are provided—often at great expense—for the research needs of one faculty member or a small group of faculty members.

If the above language sounds pejorative, that is not because I am opposed to research holdings in libraries; I'm not of course. Rather, my point is that the narrow utility of such holdings is seldom admitted.

On many campuses, indeed, the university library holdings are fragmented into smaller libraries, often departmental libraries. On others, such departmental libraries have been fought for but the proponents of central facilities have won. In my context the important point is the existence of the controversy which at least implies the nearly local nature of much of the holdings of a university library. It is, by the way, interesting to note that those who favor departmental libraries usually still wish
the local library to be not only admin­
istered by the university staff but also
supported by it. Departments are usually
interested in library budgets only to
the extent that funds are available in
the university library budget for specific
support of their needs.

The contrast with computing is inter­
esting. Departments may have their own
computers but they almost always both
administer and support them them­selves. This contrast between libraries
and computers was probably reasonable
when generous federal funding was
available for the latter but not the for­
mer. But this is no longer the case and
a closer congruence between administra­
tion and support for departmental li­
braries and computers seems to be in or­
der.

Library collections—books and peri­
odicals—which support fairly narrow
research activities account for a signifi­
cant portion of library expenditure in­
cluding some of the most costly on a per
book or journal basis. It needs to be rec­
ognized that such collections are quite
analogous to the laboratory equipment
so important to the research of scientists
and engineers. Again, it is true that, in
the halcyon days of massive federal
funding for laboratory equipment, no
valid argument could be made for con­sidering library collections oriented to­
ward specific research areas analogously
with laboratory equipment. But times
have changed and now more thought
should be given to treating some library
acquisitions and expenditures in a man­
ner similar to laboratory equipment.

My conclusion then is that the sup­
port of university libraries should be
looked at in three parts: (1) That
which truly supports a university-wide
academic resource; (2) that which
mainly supports departmental needs
rather than wider needs; and (3) that
which mainly supports individual re­
search.

It is clearly not simple to assign each
item in a university to one of these
three categories. Indeed, it is clearly not
in the interests of those for whom parts
of a library serve as little more than
personal research collections to make
this distinction. The result is often in­
dividual or departmental demands, par­
ticularly at growing universities, for in­
creases in collections in certain areas
which just bear no relation to the gen­
eral academic function of the depart­
ment. I heard recently of a humanities
department chairman who claimed that
a minimum of $750,000 was needed to
bring an already substantial collection
up to snuff. It was not clear whether he
thought his faculty or students really
needed to read any substantial part of
this material or whether the tactile plea­
sure which would be gleaned from han­
dling the books was the real point. In
any case, such requests are only possible
because we have lost control of the
place of libraries at universities. Only
when we get this under control will the
insatiable demands of university li­
braries for funds be put in a perspec­tive
where they will no longer result in
deprivation of other parts of the uni­
versity.

Now it is surely impractical to physi­
cally divide the library budget into
three parts as implied by the categories
above. But it is not impractical to esti­
mate the approximate parts of the li­
brary budget attributable to each area
and to make budgetary decisions based
on this. In particular the total universi­
ty resources available for departmental
support and research support should in­
clude the funds now used to support
the latter two categories above. Depart­
ments should be able—perhaps should
be forced—to choose how much of the
total support available to them should
be spent on libraries. From another
point of view, some of the funds ex­
pended for other than university-wide
library support might be diverted to
support such university-wide resources—
and not just in libraries—or vice versa.

THE UTILITY OF A UNIVERSITY LIBRARY

Let us admit that it is surely very difficult to measure the value to a university of a book or a collection of books. Indeed, it is widely felt that attempts to attach such values to any facet of the academic process is antithetical to it; education may be a product but who has the temerity to place a value on it or its components? Yet one of the reasons for the current financial problems of universities is their failure to establish priorities. And such priorities can only be set by attempting, at least in a relative sense, to measure the value, the utility of allocating resources among conflicting competitors.

The single most important point to make about the utility of the books in a university library is that this varies greatly among the collection. Coupled with this is the fact that very few, if any, libraries consider the utility of a particular book or periodical when ordering it. There are, for example, those libraries which have standing orders into major publishers for everything they publish and which subscribe to almost every periodical in print. Now it is true that often one cannot fairly judge the value of a particular book or periodical when ordering it. There are, for example, those libraries which have standing orders into major publishers for everything they publish and which subscribe to almost every periodical in print. Now it is true that often one cannot fairly judge the value of a particular book or periodical. The sum of a library’s holdings in an area may be greater than its parts because, for example, it may provide an environment conducive to research where a smaller holding will not. Still this does not gainsay the fact that large portions of most library collections are not only unused but, more important, are such that there is low probability that they will ever be used.

Moreover, the costs of using a university library are seldom calculated and are, in fact, much greater than most people realize. For example, a recent survey of major university libraries (CRL, Jan. 1970, p.28-35) indicated that the ratio of total library expenditure to the volume of general and reserve circulation indicates a cost of about $4.00 per book circulated. Now, of course, this isn’t really a fair number. Libraries are not just circulators of books. Many people work in the library itself. Still, however one looks at it, the cost of providing service to its users is high. Corresponding figures for computing centers are hard to come by but, as an example, the University of Colorado charges a minimum cost of $.60 (which includes $.20 representing the rent charged by the university to the center) for each job run. This minimum cost is in fact the actual cost for most jobs, particularly those run by students.

Now who has ever thought of comparing the educational or research value of borrowing a book or periodical from a library and running a program on a computer? Maybe the values are incommensurate. But unless there is an attempt to make such value judgments, it is difficult to see how any rational decisions can be made on the allocation of resources to libraries and computing.

THE BREADTH OF USAGE OF A UNIVERSITY LIBRARY

There should be no university discipline which does not make some use of a university library. But the amount of usage and library requirements are widely disparate. Whereas an historian may need to study broadly and deeply in a collection of books and documents, many scientists require libraries only quite occasionally and then for very specific, directed study to a single book or periodical. Therefore, whereas for teaching purposes the reserve collection may be very important to scientists, their research needs may be much more limited. In terms of its value to their work, the library may be quite secondary to many scientists (and others). Of
much more importance may be their own laboratory equipment and computing facilities.

By contrast, the use of university computing facilities is not yet nearly so widespread for teaching or research as the use of the library. Outside the physical sciences, engineering, and the social sciences many departments make no use at all of computing facilities. It is easy to predict that the rapid spread of the use of computing throughout the academic process will continue until it will be a rare student and rare researcher who does not have contact with computing. But a more important point is that the number of departments to which the computer is vital for teaching and research is not significantly different from those to which a major library is vital. Thus, if a library is still the most important academic resource on a college campus, it no longer stands by itself, far more important than the computing resources.

From the point of view of immediacy, computing facilities on campus are even more important to those who need them than is a comprehensive library to those who require it. Lack of adequate computing facilities or fast service can be a severe, sometimes fatal impediment to effective research activity. Use of off-campus facilities is often not a reasonable alternative for both cost and logistic reasons. The lack of a specific book or periodical at a particular instant seldom causes similar difficulties. Admittedly, the efficiency of interlibrary loan procedures leaves much to be desired, but it is relatively unusual for the lack of specific items in the university library to make a research activity unfeasible. Also, when this is so, the needed item or items are likely to be of the very rare and/or expensive kind which puts them in the class analogous to laboratory equipment rather than in the class of a university-wide resource.

Thus, those parts of university libraries which truly serve as university-wide resources are on the one hand quite comparable in breadth of usage to a computing center and, on the other hand, by no means the whole of the library.

Libraries and the New Technology

I have studiously avoided thus far any arguments based on the effect of computer and communications technology on libraries. I believe it would be necessary to reconsider the relative position of libraries and computing facilities even if there were no indication of a significant impact by this technology on the structure of a library and how it transacts its business. And let us admit that the impact of this technology looks much less profound or at least much further in the future than many computing people felt just a few years ago. But, for example, rapid long-distance facsimile reproduction, such as by long-distance xerography, is not too far away from becoming economic. When it is, the argument for extensive duplication of back periodical holdings or even current specialized periodicals will decrease considerably. All that need be said here is that none of the foregoing arguments require any of the new technology to be valid, but all will be strengthened as the new computer and communications technology becomes available and economic.

This article is a plea for a reconsideration if not a reevaluation of the relative place of a library in a university. It is a plea to make this reconsideration in an atmosphere free of the shibboleths of the past or the vested interests of the present. Although it is clear that I believe the result of such a study would be to downgrade this still most important resource, I believe even more strongly that universities must reassess their commitments in all areas if they are to survive the current parlous times in as good shape as possible.
ELIZABETH W. STONE

Quest for Expertise: A Librarian’s Responsibility

A distinguished anthropologist, Ashley Montagu, once wrote, “The deepest personal defeat suffered by human beings consists of the difference between what one was capable of becoming and what one has, in fact, become.”1 The purpose of this article is to focus attention squarely on ourselves as librarians to see what gaps exist between perceived importance and actual involvement in the area of the academic librarian’s professional development and to develop action planning on the basis of the data.

Much has been written concerning the need for the continuing professional growth of college and university librarians, but the ideas expressed have generally been the feelings and suppositions of library administrators, library school professors, or library association leaders. The author knows of no study concerned directly with the perceptions of practicing academic librarians toward their own responsibility for professional growth and their own practices concerning these activities. This essay presents part of the findings from a study which presented an opportunity for a stratified random sample of sixty-eight college and university librarians (twenty-one graduates of the MLS class of 1956 and forty-one MLS graduates of the class of 1961) to express their views concerning their responsibility in this area of growth and to reveal their practices in order to determine gaps between what they think they should be doing and what they actually are doing for professional growth.2

The college and university library participants placed greatest importance on (1) reading professional literature in library science; (2) reading in their subject specialty; (3) attending library conventions or meetings; (4) recruiting for their profession; and (5) visiting other libraries. They placed least importance on (1) participation in in-service training activities inside the library (Rank 37); (2) formal course work to meet certification requirements (Rank 36); (3) formal course work at the post-MLS level in library science leading to a sixth-year credential (Rank 35); (4) service in political clubs (Rank 34); and (5) participation in honor societies or fraternities (Rank 33).

The findings revealed that the college and university librarian participants were chiefly involved (spending time and energy) in reading professional literature in library science (Rank 1); reading in their subject specialty (Rank 3); visiting other libraries (Rank 3); attendance at library conventions or meet-
ings (Rank 4); and recruitment for the profession (Rank 5)—exactly the same activities which they considered to be the most important for professional growth. The college and university librarians further indicated that they were minimally involved in formal course work to meet certification requirements (Rank 36.5); formal course work at the post-MLS level in library science leading to a sixth-year credential (Rank 36.5); participation in employee unions (Rank 35); service in political clubs (Rank 34); and formal course work to qualify for salary increments (Rank 33).

Thus, based only on comparison of overall rankings, the chief differences between activities considered important for professional growth of the college and university librarians and activities in which they were actually involved were at the lower end of the continuum. They rated activities related to employee unions, in which they were minimally involved, twelfth in importance out of the thirty-seven items listed and, rather surprisingly, they ranked in-service training activities least important but ranked it tenth out of the thirty-seven items on which they were spending time and energy (which would seem to have a message to give regarding the quality of the in-service programs in which they were participating).

On the basis of the evidence presented, it might seem at first glance that college and university librarians could sit back and be well pleased with their efforts in the area of continuing education and professional growth. Were they not busily involved (except in two instances) in the very things they rated most important for professional growth, and least involved in those activities they deemed least important? Further analysis showed, however, that on an item-by-item basis, the librarians were spending far less energy and effort on the majority of the activities listed than they considered necessary for maximum professional development. The activities that showed the largest gaps between importance and involvement were legislative promotion of financial support of libraries; legal support of intellectual freedom; and support for librarians’ tenure, retirement, and other benefits.

From the data, some aspects of the present character of librarianship become apparent. Evidently the librarians seemed to regard as more important those activities that are somewhat informal in nature and which provide social contacts with others in the profession. The librarians were much less concerned with activities which called for independent action, such as research, writing, formal course work, and study in small independent groups.

These observations are reinforced by findings in other sections of the study which show that 87 percent of the college and university library participants had not published any books in library science or in any subject specialty; 81 percent had edited no library journals; 79 percent belonged to no individual study group; 74 percent had not engaged in any research since their MLS, nor did they belong to any learned societies; 68 percent had not formulated any self-learning career agenda for themselves; 58.8 percent were not reading regularly any other professional journals (outside librarianship) at the time of the survey; and 58 percent had had no articles published during the last five years.

**Implications**

These findings suggest three problems. (1) The library school has not given sufficient attention to presenting its students with a clear and precise model of what one should be able to do to qualify as a professional. If the library school does not instill this concept, it is
difficult for the librarian to develop his own after leaving the university. (2) Library administrators have not succeeded in "producing conditions where people and ideas and resources can be seeded, cultivated, and integrated to optimum effectiveness and growth." (3) The librarians themselves have not fully realized that an essential element in professional behavior is clientele service based on expertise and on the willingness to do all that is involved in order to assume the role of expert. In this article, attention is focused on this third area.

This study did not attempt to state what the ideal character of librarianship should be. But the data collected did suggest some objective norms by which an individual librarian could compare his position within the profession with other librarians. As part of the overall study, a Professional Index Score was derived which reflected twelve commonly held professional criteria. Based on the answers from the total number of respondents, scores were dichotomized into a "high" and "low" category. Of the academic librarians, 74 percent fell into the "low" category. Similarly, a level of aspiration score was derived (made up of certain professional and personal goals within the profession of librarianship); 72 percent of the college and university librarians were in the "low" category when these scores were dichotomized.

Writing to educators, Don Davies forcefully points out that a profession . . . will be irrevocably shaped by that for which its members hunger most. If we hunger for the self-respect that comes with self-discipline and the courageous exercise of personal and professional autonomy, and if we hunger for expertise in all that we do as professionals, we shall be proud of our calling and our commitment to it, and we shall build a profession that will be able to provide the high-quality . . . service which the times demand.

Are the things that the librarians hunger for most—professional reading, attending meetings, recruiting, and visiting other libraries—the activities that would most effectively upgrade the profession? What the librarian considers most important for his professional growth is one of the tangibles which will determine in what manner the profession is upgraded.

In essence, there would seem to be two basic problems facing the profession relative to the data presented. First, how to upgrade the level of what librarians consider most important for their own professional development. Second, how to bridge the gap between what the librarians are actually doing for their professional development and what they think they should be doing in those areas.

The means that the librarians are using to achieve professional growth are the old familiar ways that many other professions have tried. But, as Houle pointed out, in profession after profession, these overworked standbys are being examined in a new light. The universal conclusion is that some form of strong correction is needed. These altered means are based on the premise that every profession must be concerned with the education which occurs throughout the lifespan of its individual members and on the premise that one of the most creative and effective solutions to many complex problems is the development of programs that anticipate the stresses of rapid and radical change. John Lorenz has sensed the urgency of this need.

The development of strong programs for the coming decades demands from professional associations, library schools, and librarians a commitment to the ideas of self-renewal and excellence in professional education, and to willingness to adapt to change, to utilize the knowledge of other disciplines in designing new libraries and new services to meet new needs. Lorenz calls attention to one of the
Quest for Expertise

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<tr>
<th>Rank According to Involvement (Range 1-37)</th>
<th>Rank According to Importance (Range 1-37)</th>
<th>Type of Formal Course Work</th>
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<tr>
<td>36.5</td>
<td>36</td>
<td>For post-MLS sixth-year credential in library science</td>
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<td>32</td>
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<td>32</td>
<td>For qualification for salary increment</td>
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<td>21</td>
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<td>14</td>
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<td>For general enrichment</td>
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greatest needs—for professionals to take the commitment to continuing education seriously.

If librarians are going to be victorious in their fight against obsolescence, it would seem that one area of primary focus would be formal study in a university setting following the MLS degree and experience in the field. In a recent article, Bennis emphasizes that attitudes toward continuing education are changing. “The idea that education has a terminal point . . . is old-fashioned. A ‘drop-out’ should be redefined to mean anyone who hasn’t returned to school.”9 One of the most revealing and alarming findings in the data collected was the attitude of academic librarians toward formal course work. In general, these librarians were neither hungering for nor did they attach much importance to formal course work, nor were they involved in it to any great extent. Of all the activity items listed, formal course work received some of the lowest rankings both in importance and involvement. For example, out of the thirty-seven items listed, various kinds of formal course work received the ratings given above by college and university librarians.

This attitude toward formal course work is also noted elsewhere in the study by the fact that 93 percent of the college and university library respondents had not received a further advanced degree since receiving their MLS degree, and 62 percent had taken no formal study of any kind for credit following the receipt of their MLS degrees. But will the library schools be able to draw the busy professional away from his work to learn that which is new and difficult in order to keep abreast of constant changes in a turbulent and uncertain environment?

This presents a problem in motivation. But the librarians themselves gave some valuable clues to solving the problem. They stated forcefully that they were interested in taking only courses that were based on their actual job needs and those that were interdisciplinary in their approach and instructors who were more concerned about content presented than in fitting a student into a formal degree program. This general feeling was also reinforced by the statistics presented here which show that the one type of formal course work rated in the median ranking for importance and involvement was the formal course for enrichment purposes. The respondents also suggested that the content of courses might be packaged by the library schools and, making full use of the new media and technology now available, be made available to them wherever they might be located geographically.
BATTLEGROUND FOR ACHIEVING EXPERTISE:  
THE MIND OF THE PRACTITIONER

College and university librarians are not actively pursuing obsolescence, but there are indications that some are passively permitting it to overtake them. To obtain the expertise demanded by today’s faculty, students, and community, it is necessary to work individually to narrow the gap between what we are doing and what we are capable of doing professionally. We must become aware of our own needs for learning and realize that continuing education is not something done to someone, but rather something the individual must constantly do for himself.

Examples of the realization of this concept are found in the spontaneous responses of the participants in the survey.

Continuing education is basically an individual responsibility for which one has to plan. If students graduate from an MLS program with the attitude that graduate school is a life-time guarantee of professional competence, their minds may never be able to master the vastness of today’s challenges and problems. They will not be as literate as the people they serve.

No matter what opportunities are made available by societies or government, they are useless without individual initiative.

The primary responsibility for the individual’s continuing growth rests with the individual.

Two signs of a professional are the individual’s continually seeking opportunities for development and further learning, and his realization that the main instrument or “tool” for him as a professional is himself and how creatively he can use his talents and training. The respondents in the study indicated that a new kind of self-discipline and initiative are required. They suggested some important strategies for learning and pointed out areas in need of attention.

How you grow depends upon you alone, but any growth should be based upon a considered view that the growth enable you to serve your clientele (not yourself) better.

This calls for reassessment of our attitude toward professional development. We must come to the full realization that one has entered a client-oriented profession which makes lifelong learning mandatory if one is to serve his clients with expertise. Further, it is a necessity if the librarian is to be looked upon as a professional by those he serves. A strongly stated presentation of the importance of client orientation is found in the recent article by Bundy and Wasserman, “Professionalism Reconsidered.”

Classify impediments and favorable conditions . . . seek avenues of growth . . . plot a course of action and stick to it.

. . . decide on goals.

The suggestion here is that the librarian should carefully analyze his own needs and work out a plan for long-term professional growth to combat personal obsolescence. A definite learning agenda is called for. Specifically, this would mean the formal writing of a statement of aims, definition of the areas for study, searching, reflecting and testing, and preparation of a list of priorities. Such a systematic approach to the matter of self-learning insures that time invested will be used efficiently and that efforts will be concentrated where most needed. An excellent checklist to guide the individual in the preparation of such agenda is the statement by Dill on “Strategies for Self Education.”

The problem in this area is, according
to Knowles, “that education is not yet perceived as a lifelong process, so that we are still taught in our youth what we ought to know rather than how to keep finding out. One mission of the adult educator, then, can be stated positively as helping individuals to develop the attitude that learning is a lifelong process and to acquire the skills of self-directed learning.\textsuperscript{12} He goes on to point out that, in a sense, the criteria of success of a human relations workshop, a staff meeting, or any given course is the extent to which the participants leave the experience with heightened curiosity and the increased ability to carry on their own learning.

Read! Widely! Outside library professional literature.

Formal instruction in government, economics, information retrieval, education, public administration, sociology, all would be helpful.

The librarian must recognize that he needs to study the basic disciplines which support librarianship—and they are growing in number every year—so that he will be able to judge the applicability of their findings to his own work. The librarian cannot, of course, become a “professional” in all relevant disciplines, but he must be sophisticated enough to make competent use of the scientific knowledge that is available. The time has come when every competent librarian, as every other professional practitioner, finds it necessary to be sufficiently well versed in all the disciplines relating to his work to be able to read the literature and judge the adequacy of his findings and claims for himself. That is to say, the position of the librarian in relation to the social and behavioral sciences should be no different from that of the engineer in relation to physics or the doctor in relation to biology and chemistry.

Don’t be afraid of innovation and change. We see fear everywhere that the non-book material is going to gain supremacy. Fear is nurtured by ignorance. Go to every course and workshop you can.

The view expressed by this respondent reflects the contention made by Bundy and Wasserman that “Innovation remains on trial when it should be encouraged. The field stands conservative and deeply rooted in the past at a time when such a stance exposes it to danger.”\textsuperscript{13} One way to welcome innovation rather than flee from it in fear is to participate periodically in formal academic programs—whether of a course, institute, or workshop framework—in a university setting. At a university it is acceptable to be critical of the status quo, to experiment with new concepts and innovative ideas. Such return trips to the university will broaden the librarian’s understanding of his job and challenge him to replace old truths with new truths which he can later incorporate into his job. By such procedures he can prevent change from outdating his competence.

The respondent suggested attendance at workshops, but it was found that during the last five years, 0.3 days per year was the median time spent in attendance at workshops or short courses by the academic library participants in the study. Further, 38 percent of the college and university librarians reported that they had attended no workshops or seminars at all during the last five years.

What we need most after we have been out in the profession is training in human relations, personnel guidance and supervision.

This statement points up the need of the individual librarian for sensitivity to human values as well as the necessity of stimulating the development of each individual in his library. As the librarian moves from echelon to echelon, he needs help in directing effectively the work of other professional workers and
colleagues. Skill in work direction involves, over and above all other elements, understanding of human motivation and human relations—how to develop the full potential of each individual. These skills can be improved through classroom experience and problem-solving situations; they can be improved through reading. Such study can give an understanding of theory which is basic for every manager as he directs others, because every decision he makes and every action he takes rests on the management theory which he holds and believes in. But skill in social interaction does not come solely from lectures, discussion of the principles of supervision, or reading. Research has shown that effectiveness in applying skills and practices in the area of human relations is also related to the impact of our behavior on others. One recent method for developing skill in social interaction uses variant forms of sensitivity training developed by a group of social scientists affiliated with the National Training Laboratory for Group Development. The purpose of the T-group (training group or sensitivity group) is to help individuals increase their understanding of the impact of their behavior on others, of their own reactions to the behavior they exhibit. That its consequences are of genuine significance is evidenced by the growing demand in many professions for opportunities to participate in this form of education.

Bennis sums up the need in this area: “In addition to substantive competence and comprehensions of both social and technical systems, the new leader will have to possess interpersonal skills, not the least of which is the ability to defer his own immediate desires and gratifications in order to cultivate the talents of others.”

I’ll suggest individual discussion groups to my colleagues.

In making this statement, the respondent was referring to the value of the small voluntary study groups which, in recent years, have become an important extension of the principle of self-instruction. The American Psychological Association has viewed them as loosely knit groups of people who meet together, correspond with one another, read papers to each other, circulate reprints, and generally stimulate one another through mixed collaboration and competition. In the literature they have been termed “invisible colleges.”

It has been found that these groups have extraordinary importance, not only for their own participants, but also for other alert people who aspire to membership. In the present study, 22.4 percent of the respondents indicated that they were participating in such groups. The suggestion here is that such groups are an excellent method for the professional to use in constantly expanding his knowledge, and are a means of reinforcing and strengthening existing professional associations.

Engage in research and growth will follow automatically.

Although many leaders in the profession have emphasized the need for librarians to engage in research, it has generally been characteristic of the profession to invite specialists from other fields to study the nature and needs of librarianship. These specialists from other disciplines do research, state their views and conclusions, and depart. Rarely does sustained research ensue on the part of the librarians themselves. In fact, this has been one of the characteristic differences between librarianship and other professions. In librarianship, leadership typically comes from the ranks of those holding office in professional associations, while in scholarly disciplines, it comes from the production of research resulting in thoughtful publications.
The importance of publishing the ideas and findings of research in a scientific manner, of making those materials visible to as wide a reading audience as possible, is also important. It was Dr. Abraham Flexner's contention in 1915, and it stands as true today as the day he spoke his view to social workers, that "the evolution toward professional status can be measured by the quality of publication set forth." He went on to observe that this was not the sole responsibility of publishers, but the joint responsibility of all members of the profession to provide a record that was scientific rather than merely journalistic in its character.

Admittedly, it is difficult to get the results of research published, but even without publication, the rewards of research are great to the individual, as the participant in this study indicated, and certainly all such research serves the ultimate objective of giving more expert service to the clientele.

Admittedly too, not everyone is inclined to do research himself, but just as important to the profession's overall research effort is a scholarly concern which will cause the individual to interpret and apply the research of others. There is no value to research which in the end is not applied and tested. There are countless opportunities for the practicing librarian to research further within the profession by experimenting with research findings not only in library science but also in the behavioral sciences. Gomersall and Myers recently published a helpful article delineating ways and means of testing research findings in an organization setting.

Individual growth will follow just as surely from the application and testing of research findings of others as from solving problems through the basic research activity itself.

Librarians should get involved in non-library activities in the community . . . be active and alive, the rest of us are being judged by you.

Some of the best minds in America are telling us that our nation today faces the most severe domestic crises we have confronted since the Civil War. In our cities we are faced with deep-seated problems which can be arrested and cured only by daring, imaginative, and cooperative action. There is no single group which can cure the situation. It is a job for everyone—a job in which librarians should be playing a major part as professionals in society. If we are to stand with other professions we must involve ourselves in community action as a means of serving our widest clientele—the public at large. In short, to stand with other professionals in our society, the librarian must accept his share of responsibility for the environment in which he operates; he must bring to these community needs the full weight of his professional expertise.

In order to bring expertise to the situation, the individual librarian needs to see fully how the forming of objectives of library service should be related to major problems in society. He needs to "catch up" and to supplement prejudices and beliefs with knowledge based on current sociological findings. Reading is helpful, but as most people grow older, they find it increasingly difficult to adapt to new ways. They are less eager to experiment with the development of new procedures. To make their reasoning processes more flexible and to acquaint them with possible approaches to increasing the effectiveness of library service to the community, they need detachment from the day-to-day routine of the library and the stimulus of new faces and new concepts. Here again the university is an environment which can satisfy such a need—if it recognizes the individual's special needs and provides individualized opportunity to seek the
concepts and knowledge that are essential in formulating ways and means of cooperating with other agencies in the community.

CONCLUSION

Margaret Mead stated one of the most vivid truths of our new age: "No one will live all his life in the world into which he was born, and no one will die in the world in which he worked in his maturity." Facts and conditions change. We must keep up with the facts and the conditions. Keeping up with the facts and conditions changes them. It is a fallacy to think we can solve the problem of obsolescence in any final sense. The belief that we can is a hindrance to our thinking. What we need is some systematic process for confronting new facts and concepts continually. When we think we have slipped behind and we must run to achieve expertise, we are often discouraged. Why? Rather than be discouraged, it should be our strength and our hope, for we do not want any life pattern that holds us enmeshed and keeps us from becoming that of which we are fully capable of being.

REFERENCES

2. For complete study, which included findings relative to all types of librarians—public, school, special, and academic—see Factors Related to the Professional Development of Librarians (Metuchen, N.J.: The Scarecrow Press, 1969).
3. The paired t-test was applied on a horizontal basis to the thirty-seven activity items to measure the disparity between the degree of importance and the degree of involvement that was accorded each development activity.
5. Each of the responding librarians was assigned a professional index score. The highest possible score was fifty-two points. For purposes of analysis—so that the professional index score could be related to other variables in the study—the correlation coefficients were computed for the scores by dividing them into high and low groups. A score of twenty and above was placed in the "high" group; a score under twenty was in the "low" group.
10. Mary Lee Bundy and Paul Wasserman,
13. Bundy and Wasserman, "Professionalism Reconsidered."
15. Ibid, p.221-25.
20. John F. Mee, "Participation in Community Affairs: The Role of Business and Business Schools" (Research paper, Division of General and Technical Studies, Indiana University, 1965). (Mimeo.)
Sources of Professional Staff in Selected Academic Libraries

All libraries surveyed report that their own library school graduates and faculty wives hold positions on their staffs. Both advantages and disadvantages to such appointments are expressed by respondents to the survey. A trend toward the elimination or curtailment of appointment of local library school graduates to the staff was revealed by the study. Problems arising from the appointment of faculty wives and other local persons may be eliminated or reduced by better communication between library administration and staff and by the achievement of a high degree of professionalism by academic librarians.

The success or failure of an entire library operation depends upon the recruitment of well-qualified librarians. Special considerations arise in connection with recruiting in academic libraries because of the increasing tendency to apply faculty standards to the professional library staff.¹ If college and university librarians are to achieve full academic standing alongside classroom faculty, they must show a willingness to apply the same standards to the selection of prospective staff members as are applied in other departmental faculties.

Several questions arise concerning the source of library staff members. At colleges and universities which offer ALA-accredited programs, to what extent does the library recruit the graduates of its own library school? And, if their own graduates are appointed to the library staff, what restrictions are placed on their appointments? Can any effect be seen on the standing of librarians in the academic community by the practice?

Another series of questions arises concerning the appointment of local persons to professional library staff positions. Local persons as herein defined are wives of university faculty members and graduate students, and/or of other persons employed in the community as principal breadwinners of the family. To what extent are such local persons appointed to library staffs at academic libraries and how do these appointments affect those who occupy these positions? Are there special problems associated with these appointments either for the library administrators or for those holding the appointment?

In an attempt to secure information regarding these questions—that of the appointment of library school graduates to the university library staff and that of local persons employed on the staff—an inquiry was sent to each of the forty-four university libraries in the U.S. and Canada at which there was at that time an ALA-accredited library school. The inquiry drew responses from thirty-three libraries, the sizes of which varied from one with a professional staff of 180 to several with staffs

¹ T. H. Milby is science librarian at the University of Oklahoma, Norman.
of fewer than ten professional librarians.

All of the schools reporting had some librarians on their staffs holding library degrees from their own university. A large eastern school, while not able to give an exact figure, reported "perhaps a majority" of a staff of 180 to be their own graduates, while a west coast school reported fifty of a staff of 144 professional librarians holding library degrees from their own university. Other large schools reporting included a Canadian university with ninety-two of 139, a northern U.S. university with 63 percent of 135, and a western U.S. school with 50 percent of 110. Among the smaller schools reporting were two from the eastern seaboard. One of these had five of six with degrees from its own school; the other six of eleven. A smaller university from the southwest reported four of twelve and a New York university had six of twelve.

Among private universities, those reporting included a lake state school with forty-five of ninety, an eastern church-related university with twenty-five of thirty-eight, a midwestern university with forty-three of fifty-five, a northeastern university with forty-three of sixty-seven, and a southeastern university with nine of twenty.

Attitudes regarding the employment of local library school graduates vary from unqualified endorsement to firm though often unofficial objection. Among the former may be cited a response from a small school near Chicago.

We have been entirely satisfied with the professional librarians who hold library degrees from our own institution. In fact, we find it an advantage to hire individuals whose performance we can predict. We have found them very loyal and stable.

And from a large university in the Midwest.

It does offer you the 'cream of the crop' which probably outweighs the somewhat assumed disadvantage of inbreeding.

A contrasting position is represented by the statement from a private northeastern university.

Our general policy is not to appoint—University Library School graduates to our staff. However, exceptions are made to this policy when the candidate is unusually qualified.

It may be noted here that forty-three of sixty-seven staff members at this library are its own graduates.

An intermediate position between open endorsement and outright rejection is expressed by the greater number of those replying to the inquiry. Typical of this position is that of a state university in the Southeast.

No real policy. If a graduating student applies and we have a vacancy and his qualifications are good, we hire him.

Various criteria are set in establishing limits on the appointment of staff members. In some cases the limit is based on a percentage of the total staff, such as that imposed at a large western state university.

Not a firm policy. However, we have no intention of overloading this staff with our own graduates. As a rough rule of thumb, we think perhaps 10 percent of the total professional staff would be about right.

In other cases, prior experience at another library is required to qualify for an appointment to the library staff. The statement from an eastern school is typical of this position.

We do not hire new graduates. After they have had a year or more experience in another library we will hire them.

Still another qualification is held by a northern university which appoints from local graduates at the beginning level but restricts upper level appoint-
ments to graduates of other schools.

In most cases recognition is given to the problems that would arise if all or a majority of the staff positions were filled by persons from any one school, whether that school be local or not. The problems arising from inbreeding in academic departments have been recognized and restrictions are often placed on the practice by many departments of the university. It is perhaps an indication of the movement of a library staff toward full academic standing to resist the practice of inbreeding, a resistance which characterizes the faculties of many academic departments of the university.

The second part of the present study deals with the extent of local employment in selected university libraries and the influence of this practice on salaries and other benefits to academic librarians as well as administrative problems created by local employment. Replies to the inquiry revealed some difficulty in agreeing on what constitutes local employment. In academic libraries located in large metropolitan areas such as Chicago, Baltimore, or Toronto, the occupation of librarians' spouses may be for the most part unknown or difficult to determine. This problem was reported from the University of Illinois in Chicago, Emory, and others. Guy R. Lyle at Emory expressed uncertainty as to the meaning of the category. He reported his staff to include one faculty wife, another librarian whose wife is employed as a social worker in the community, and a third whose wife is employed in a public library in the community. The first is clearly what is meant here by a local person. The second two are probably not, since in each case the librarian is the male cohort of a family and by common agreement could be assumed to be the principal breadwinner. The increasingly assertive role of women in American society may be reason to qualify this assumption.

Maryland reports "a considerable percentage of women professionals are wives of faculty members or students." In addition the case is cited of an unmarried member of an area family living at home who holds a position on the library staff. This instance and those cited at Emory illustrate the difficulty of categorizing local persons.

Although it is difficult to reach a completely satisfactory definition of a "local person," some useful observations can be made concerning the practice of local employment on the basis of answers reported by libraries to the queries. Twenty-nine of the schools reporting did list local persons on their staffs, although ten schools gave no figure as to the number or percentage of the staff which is local. A west coast school with 144 staff members estimated fourteen or more of those to be local persons. An eastern school with 180 persons, the largest staff reported, had only one faculty wife on the library staff.

Of other libraries reporting the appointment of local persons to their staffs, Hawaii, with approximately half of fifty-eight, represented the highest percentage of local persons on a staff. Geographical isolation and the difficulty of moving to and from the mainland were cited as explanations for the large percentage of local persons on the library staff there. Others reporting relatively high figures for local employment were a midwestern state university with an estimate of ten local persons from a staff of thirty-one librarians; a border state school with about twenty from a staff of fifty; and a southern school with nineteen of fifty-one staff members reported as local.

Besides the above cited eastern school with one of 180 local persons on the staff, others reporting relatively low numbers of such persons included a southern state university with twelve of fifty-one and one-half, a New York university with two of twelve, a northwest-
ern university with six of forty-eight, and a northeastern university with eleven and three-fourths of seventy-six and three-fourths.

Three eastern seaboard schools reported no local persons on their staffs but indicated there was no reason for their omission other than the lack of availability of such persons. None cited any problems anticipated with local appointments nor salary differential as a result.

A Canadian university indicated that in a city of the size in which it is located no way exists to determine which persons on the staff have "close relatives employed in the city." Two other large universities in major metropolitan areas also showed both lack of concern and knowledge of the local origin of persons on their staffs.

Of those schools offering observations about the practice, the consequence of local employment most commonly cited was the influence on salaries. A midwestern university indicated that until recently local persons had been deliberately sought out for employment and paid less as a matter of policy, but that the practice has now been discontinued.

A southern university reported that low salary scales forced a greater use of local persons than would otherwise be the case, with some consequent disadvantages to the administration of the library. An Illinois and a New York school both acknowledged the depression of salary scales as a result of the use of local persons. The former reported part-time professional salaries to be especially affected by local employment.

Catholic University, Drexel Institute, University of Minnesota, and Wayne State University each declared that local origin was not considered or was an unknown factor in the appointment of professional librarians. Each of these institutions is located in a large metropolitan area where greater employment opportunities for librarians provide alternatives to the university library for faculty wives and others seeking professional appointments. Hence the incidence of local employment is reduced and any benefit or disadvantage minimized or removed.

Only one institution reported an advantage to the appointment of local persons to the staff:

In general local persons are a bonus to the library and provide a good source for staff. On a very few occasions there have been some urgings to see that a wife is employed.

Other library administrators reported problems connected with local appointments. One university in the South mentioned "problems of faculty wives and student wives who want to take time off when their husbands are out of school between terms, Christmas, holidays, etc. . . ." The matter of scheduling reflects the anomalous position of the library in the university community in reconciling its duties and responsibilities with the academic calendar. Technical processing must continue whether classes are in session or not and research activities of faculty and students which require library resources are not interrupted by holidays and semester breaks. The problem facing library administrators of reconciling the ongoing demand for library service with increasing demands by academic librarians for full faculty recognition along with faculty benefits will continue to demand the attention of the profession.

The problem of nepotism was referred to in comments by two large state universities. At one of these, tenure is denied faculty wives and "an annual waiver of nepotism from the Board of Trustees" is required. Morale problems are reported as a result of this limitation. A University of Michigan administrator pointed out the awkwardness of the situation for the library should it be necessary to dismiss a faculty-wife
librarian for cause. The ill will thus created can be far-reaching.

The question of the employment of local persons as herein defined does appear to occur in a significant number of academic libraries. Disagreement as to what defines a person as local creates some difficulty in making meaningful judgments about the practice.

Problems arising from the practice may be considered from two standpoints. The first standpoint is that of the librarians themselves, that is, the disadvantages that a faculty or graduate student's wife experiences as a result of her relationship to a male member of the academic community. Two disadvantages that are noted by respondents are discrimination in salary and ineligibility for faculty benefits such as tenure. Salary differentials for local persons no doubt reflect an economic reality, unless otherwise altered through coercion or by an attempt on the part of an administration to achieve equity. When necessity dictates and when no alternative is present an employee will often accept the salary that is offered. Librarians, like many professional people, are without strong and effective organizations to act as bargaining agents for their constituencies in matters of salary and other occupational benefits. Recent developments among librarians in California and elsewhere, and indeed restiveness for greater coercive powers through ALA by elements of its membership, are all healthy winds of change in bringing about the elimination of salary differentials and preventing the loss of other professional benefits.6

The second standpoint regarding the appointment of local persons to the library staff is that of the library administration. Various comments received indicate that this practice has both advantages and disadvantages to the administration. The problem of accommodating library work schedules to the desires of wives requesting time off during academic holidays may be troublesome for an administrator. Another serious difficulty may arise when a faculty-wife librarian proves to be unsatisfactory. Dismissing or reprimanding such a person can become difficult because of repercussions beyond the library. When salaries are depressed because of local employment, administrative difficulties arise in connection with recruiting. Only two institutions referred explicitly to the problem of salaries and in each instance reported that salary discrimination against local persons had been discontinued.

It should be pointed out that while twenty-nine libraries reported the practice of hiring locally, only six commented on the adverse effect of the practice either from the viewpoint of the librarian or of the administration. The remaining twenty-three either make no comment or report no known problem.

The disadvantages to the library staff member from the nepotism rule would apply to any second employee member of a family in all situations where nepotism rules occur. As long as librarian-
ship remains an attractive profession for wives and as long as wives traditionally fill subordinate roles professionally to the male breadwinner, hardships are inevitable, though they are on the whole a minor consideration.

When academic libraries apply to themselves the same rigorous standards as are applied to faculties in other academic departments, academic librarianship as the first profession of a household will reduce the incidence of salary differential and nepotism discrimination against librarians. One trend toward the adoption of those standards is the restriction on appointments from the library school within the same university.

In conclusion it may be observed that local persons constitute an important source of supply for professional library positions in academic libraries. They probably will and should continue to do so in the future. Disadvantages both for the professional librarian as well as for the library administration should be clearly recognized and accepted at the time of making and receiving the appointment. Efforts to eliminate unfair practices such as salary discrimination or ineligibility for fringe benefits should be continued. Librarians accepting such an appointment should not do so expecting considerations with respect to scheduling, vacations, etc., that do not accrue to other persons on the staff. At the same time all librarians must expect and demand full freedom to establish work patterns consistent with the concept of professionalism.\(^4\) Included in that concept is the responsibility to reflect professional judgment as to how and when a job is to be done or a service is to be rendered rather than to accept patterns dictated primarily by clock and calendar. Implicit in the concept is the responsibility for librarians to become self-directing and to achieve scholarly competence in the performance of their professional duties, on a par with those of their colleagues in the classroom and laboratory. To the extent that these standards of professionalism are achieved, the categories of local and nonlocal will be rendered largely irrelevant.

While the practice of appointing library school graduates as professional members of their own university's library staff is widespread—one may say almost universal—it is coming increasingly under criticism by academic librarians. Various restrictions are being placed upon the practice, and while its elimination altogether may be neither feasible nor desirable, the reduction of the practice to a level more in keeping with that practiced by strong departments on the campus will do much to raise the standing of librarianship as a professional discipline in the academic community. The benefits to be gained by the library staff from the interaction of librarians with diverse backgrounds will improve not only the quality of the library where the practice is employed but indirectly and in time the quality of the profession as a whole.

References


2. Schiller reports that 40 percent of the women librarians are married and 15 percent are faculty husbands and wives. While these fig-
ures represent a significant portion of local persons, the category should be more broadly defined to include such persons as unmarried persons living in parents’ homes or those in some way bound to the community by ties which reduce or hinder mobility. Anita Schiller, *Characteristics of Professional Personnel in College and University Libraries* (Illinois State Library; Research Report no. 16, 1968).


Cost Accounting and Analysis for University Libraries

The approach to library planning studied in this paper is the use of accounting models to measure library costs and implement program budgets. A cost-flow model for a university library is developed and tested with historical data from the General Library at the University of California, Berkeley. Various comparisons of an exploratory nature are made of the unit costs and total costs for different parts of the Berkeley system.

The Cost-Flow Accounting Model

There does not appear to be any uniform method by which libraries account for their internal costs. Considerable attention is given to the development of budgets along organizational lines and to the control of expenditures for labor and materials. But these data are not used to measure the cost of performing some function or rendering some service in the manner of industrial cost accounting. For example, in order to estimate the cost of holding a journal and to compare it with the cost of using a regional lending service, Williams had to develop his own basic data in four libraries by means of interviews and other sampling techniques. In their recent study of the M.I.T. Libraries, Raffel and Shishko had to augment the existing data base considerably in order to estimate the cost of various library functions and programs. In addition, the papers of Penner and Landau provide a good review of previous cost studies.

A basic notion in the development of a cost control system is the idea of a "cost center" for which there is a clear definition of function and responsibility. The cost centers serve as focal points in the system for the collection and evaluation of cost data. There appear to be two major kinds of cost centers in libraries: processing centers and service centers. The processing centers serve an intermediate role in the flow of resources to the service centers, and all of their costs are passed on to the service units. The service centers can include branch libraries or specialized facilities within a central library. These units offer a schedule of services to certain users at certain "prices" which together comprise the output of the library. A library program may be identified with a single service unit or may cut across several or all units. Shishko divided the mission of the M.I.T. Libraries between research and instruction without subdi-
viding it by subject area. In a branch library system most branches would contribute to both research and instructional programs and their individual output would have to be divided under the two main headings, if this is desired. In accounting for costs and developing costs of service estimates it is important that these figures be related to a true decision-making function in the organization; that is, they should have a quality called "accountability." It is meaningless to develop numbers about which nothing can be done.

A simplified cost accounting plan for modelling the flow of cost through a library organization is shown in Figure 1. This plan incorporates the notion of standard cost as a measure of performance. The standard costs are based on the number of items processed, acquired, or held by the library unit. Other measures of performance could be used to gauge the flow of costs. These standards should be evaluated each year and modified accordingly so as to provide the best estimate of what is expected for the next year. "Variance" accounts can be used to collect the difference between what is expected and actually occurs; that is, between standard cost and "full" cost. This is a common and useful way to maintain control over costs and to generate management-by-exception reports. In Figure 1 only one variance account is shown for each category, but in practice one may develop separate variance measures for the amount and the unit cost of a flow. For example, if labor is costed at different wage rates for different kinds of labor hours used, it would be possible to maintain separate variance accounts for the wage rate and the labor hours to explain total labor variance. Standard costing assumes that the cost is directly proportional to the basis for unit cost; however, routine corrections can be made to account for any predictable bias from the variance figures.

The cost accounting plan in Figure 1 was applied to the Libraries of the University of California at Berkeley in order to show how costs are generated and flow through the system to the various branch and special libraries. The resulting simplified cost model of the Berkeley Libraries is shown in Figure 2. No variance accounts are included in this model, since it is based on the cost history of a single year. However, variance accounts and standard costing could be introduced. The model conforms closely to the organizational structure of the Berkeley Libraries except in the case of the Serials and Documents Department, where a division had to be made between their function as a central processing unit and their function as a special service unit for readers. A similar division was made at the branch libraries to separate the cost of selecting and accessioning new items from the cost of maintaining and providing service from the shelved collection.

The main kinds of costs in the model are the direct costs for materials and labor and the indirect costs for space and overhead. The costs of space and university overhead do not enter into the ordinary budget estimates of operating costs, but they are important parts of the total cost of operating libraries and cannot be ignored. All space for the libraries was costed at the same unit price except for the depository space, and the university overhead was applied at a uniform rate. This permitted the development of a total labor, space, and overhead figure for each organizational unit of the library.

The main distinction in the flow of materials is between monographs and serials, and between purchased items and gift and exchange items, although the latter distinction is dropped after acquisition processing. For serials, a dis-
DISTINCTION is maintained between new items and continuing items because of the difference in cataloging treatment. The total number of items and their distribution through the system are based on data from the annual reports of the Berkeley Libraries for the year July 1, 1967, to June 30, 1968 (1967/1968), although in some instances it was necessary to develop estimates from the Libraries' files of orders.

DIRECT COSTS: MATERIALS

Materials costs for the Berkeley library are limited to two classes of items: monographs and serials. Any type of library material for which a standing order can be placed is considered a serial.

Through the budgeting process each branch library is allocated money for purchase of monographs. For each branch a branch fund is maintained from which all disbursements are made. In all, more than 150 funds are used for materials purchasing for the General Library.

Each order for a monograph may call for the receipt of one or more volumes. A random sampling procedure was undertaken to determine the number of volumes per order. Eighteen hundred orders from thirteen funds were examined. From this data, the number of volumes per order was determined to be 1.20. Certain funds such as those used to buy back sets and serials and duplicate copies of high usage monographs had significantly different ratios—2.20 for both. For these funds, the latter factor was used.

Table 1 summarizes the number of monographs acquired during the fiscal year 1967/1968. The average price per monograph for the Berkeley General Library was $7.44, for a total of 81,350 items acquired. The number of items acquired by the branches was 21 percent of the total, while expenditures were 20 percent of the total ($605,588).
A second category of materials that enter into the library system is serials. To determine the average price per paid serial for the libraries, a sample of the order file of 25,450 cards was taken. Of the 1,378 orders (5.4 percent) examined, 975 (3.8 percent) were found to be related to items received and paid for in the 1967/1968 fiscal year. The results of the sample are also shown in Table 1. The average price of a serial received by a branch library was $27.23 while all other General Library units averaged $13.13 per serial. The overall average price per serial was $20.01.

Williams [1968] reports that for the four university libraries he sampled, the subscription prices per title year were $12.62, $22.62, $21.55, and $17.06.

In addition to paid serials representing 54 percent of the total received, more than 19,000 serials are received through gift and exchange operations. Table 2 shows the distribution of all serial items across branches.

**Direct Costs: Labor**

Aside from materials cost, the second component of direct costs is labor. The Berkeley library divides the labor force into three classes: professional, nonprofessional, and general assistance. Almost all student employees are hired in the general assistance category. Mean salary rates per year for each category are shown in Table 3. The nonprofessional category includes the "library assistant" job titles as well as secretary, bookmender, editor, etc.

Organization charts for the library, in conjunction with published salary
TABLE 1
MONOGRAPH AND SERIALS PURCHASE COSTS 1967/1968

<table>
<thead>
<tr>
<th>Branch Library</th>
<th>Number of New Monographs Purchased (vol.)</th>
<th>Purchase Expenditure ($)</th>
<th>Unit Price for Monographs</th>
<th>Number of Items in Serials Sample</th>
<th>Cost of Serials Items Sampled (f) Year</th>
<th>Sample Cost/Serital Item/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (AG)</td>
<td>790</td>
<td>5,879</td>
<td>7.44</td>
<td>48</td>
<td>2,682</td>
<td>55.88</td>
</tr>
<tr>
<td>Art/Anthropology (A/A)</td>
<td>812</td>
<td>5,217</td>
<td>6.42</td>
<td>13</td>
<td>96</td>
<td>7.38</td>
</tr>
<tr>
<td>Astronomy/Math/Stat (AMS)</td>
<td>390</td>
<td>3,550</td>
<td>9.10</td>
<td>15</td>
<td>309</td>
<td>20.60</td>
</tr>
<tr>
<td>Biochemistry (BIOCHEM)</td>
<td>72</td>
<td>930</td>
<td>12.92</td>
<td>9</td>
<td>231</td>
<td>25.67</td>
</tr>
<tr>
<td>Biology (BIOL)</td>
<td>658</td>
<td>6,358</td>
<td>9.66</td>
<td>76</td>
<td>2,848</td>
<td>37.47</td>
</tr>
<tr>
<td>Chemistry (CHEM)</td>
<td>181</td>
<td>2,373</td>
<td>13.11</td>
<td>22</td>
<td>535</td>
<td>24.32</td>
</tr>
<tr>
<td>Earth Sciences (ES)</td>
<td>489</td>
<td>4,065</td>
<td>8.31</td>
<td>9</td>
<td>85</td>
<td>9.44</td>
</tr>
<tr>
<td>East Asiatic (EAL)</td>
<td>4,665</td>
<td>21,620</td>
<td>4.63</td>
<td>28</td>
<td>455</td>
<td>16.25</td>
</tr>
<tr>
<td>Education/Psychology (E/P)</td>
<td>1,841</td>
<td>9,878</td>
<td>5.37</td>
<td>40</td>
<td>351</td>
<td>8.78</td>
</tr>
<tr>
<td>Engineering (ENG)</td>
<td>713</td>
<td>8,670</td>
<td>12.16</td>
<td>55</td>
<td>2,118</td>
<td>38.51</td>
</tr>
<tr>
<td>Entomology (ENT)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Environmental Design (ED)</td>
<td>1,564</td>
<td>11,925</td>
<td>7.62</td>
<td>28</td>
<td>1,376</td>
<td>49.14</td>
</tr>
<tr>
<td>Forestry (FOR)</td>
<td>272</td>
<td>2,706</td>
<td>9.95</td>
<td>14</td>
<td>188</td>
<td>13.43</td>
</tr>
<tr>
<td>Graduate Soc. Sci. (CSSL)</td>
<td>1,468</td>
<td>9,607</td>
<td>6.54</td>
<td>32</td>
<td>360</td>
<td>11.25</td>
</tr>
<tr>
<td>Library School (LSL)</td>
<td>465</td>
<td>1,857</td>
<td>3.99</td>
<td>22</td>
<td>374</td>
<td>23.38</td>
</tr>
<tr>
<td>Music (MUS)</td>
<td>1,258</td>
<td>11,922</td>
<td>9.48</td>
<td>14</td>
<td>171</td>
<td>12.21</td>
</tr>
<tr>
<td>Optometry (OPT)</td>
<td>195</td>
<td>1,716</td>
<td>8.80</td>
<td>2</td>
<td>12</td>
<td>6.00</td>
</tr>
<tr>
<td>Physics (PHY)</td>
<td>313</td>
<td>3,284</td>
<td>10.49</td>
<td>13</td>
<td>259</td>
<td>19.92</td>
</tr>
<tr>
<td>Public Health</td>
<td>976</td>
<td>7,522</td>
<td>7.71</td>
<td>26</td>
<td>441</td>
<td>16.96</td>
</tr>
<tr>
<td>Social Welfare/Crim (SW)</td>
<td>425</td>
<td>2,347</td>
<td>5.52</td>
<td>10</td>
<td>71</td>
<td>7.10</td>
</tr>
<tr>
<td>Branch Libraries Total</td>
<td>17,547</td>
<td>121,426</td>
<td>6.95</td>
<td>476</td>
<td>12,962</td>
<td>27.23</td>
</tr>
<tr>
<td>Main Library Total</td>
<td>63,803</td>
<td>484,162</td>
<td>7.59</td>
<td>499</td>
<td>6,550</td>
<td>13.13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>81,350</td>
<td>605,588</td>
<td>7.44</td>
<td>975</td>
<td>19,512</td>
<td>20.01</td>
</tr>
</tbody>
</table>

1 Includes one $2,000 item.
2 Includes one $1,250 item.

schedules, were used to calculate the direct labor cost per branch and main library unit (see Tables 4 and 5). To the extent that the organization charts do not reflect the true staffing situation, and to the extent that the mean salary figures do not represent the true salaries, the data in Tables 4 and 5 are biased.

Total direct labor expenditure amounts to $3.6 million, and of this, 22 percent is branch labor. Of the 120 Full Time Equivalent (FTE) employees in the branches, 31 percent are professional, 39 percent are nonprofessional, and 30 percent are general assistance. The 443 FTE for the Main Library is made up of 22 percent professionals, 49 percent nonprofessionals, and 29 percent general assistance.

**INDIRECT COSTS: OVERHEAD AND SPACE**

The cost of library building space is estimated to be about $5.00 per square foot per year. This figure is intended to represent current replacement value of the building space including equipment and fixtures and the cost of utilities and maintenance. The simplified method used to make this estimate is shown below. The numbers used were obtained from the studies by Raffel and Shishko and Williams, and consultation with the Berkeley and University Architects Offices, the Berkeley Grounds and Building Office, and the University Real Estate Office. These numbers, however,
TABLE 2
SIZE OF THE GENERAL LIBRARY
JUNE 30, 1968

<table>
<thead>
<tr>
<th>Branch Library</th>
<th>Volumes</th>
<th>Current Serials</th>
<th>Total Items</th>
<th>Ratio of Volumes to Serials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>63,799</td>
<td>2,437</td>
<td>66,236</td>
<td>26.18</td>
</tr>
<tr>
<td>Art/Anthropology</td>
<td>27,024</td>
<td>1,158</td>
<td>28,182</td>
<td>23.34</td>
</tr>
<tr>
<td>Astronomy/Math/Stat</td>
<td>24,574</td>
<td>927</td>
<td>25,401</td>
<td>29.71</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>5,427</td>
<td>140</td>
<td>5,567</td>
<td>38.76</td>
</tr>
<tr>
<td>Biology</td>
<td>144,090</td>
<td>3,221</td>
<td>147,311</td>
<td>44.73</td>
</tr>
<tr>
<td>Chemistry</td>
<td>18,342</td>
<td>335</td>
<td>18,677</td>
<td>54.75</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>42,199</td>
<td>977</td>
<td>43,176</td>
<td>43.19</td>
</tr>
<tr>
<td>East Asiatic</td>
<td>241,811</td>
<td>1,237</td>
<td>243,048</td>
<td>19.55</td>
</tr>
<tr>
<td>Education/Psychology</td>
<td>65,455</td>
<td>1,385</td>
<td>66,840</td>
<td>47.26</td>
</tr>
<tr>
<td>Engineering</td>
<td>63,162</td>
<td>1,638</td>
<td>64,800</td>
<td>38.56</td>
</tr>
<tr>
<td>Entomology</td>
<td>8,579</td>
<td>246</td>
<td>8,825</td>
<td>34.87</td>
</tr>
<tr>
<td>Environmental Design</td>
<td>50,728</td>
<td>1,293</td>
<td>52,021</td>
<td>39.23</td>
</tr>
<tr>
<td>Forestry</td>
<td>20,281</td>
<td>1,334</td>
<td>21,615</td>
<td>15.20</td>
</tr>
<tr>
<td>Graduate Social Sciences</td>
<td>39,014</td>
<td>2,616</td>
<td>41,630</td>
<td>14.91</td>
</tr>
<tr>
<td>Library School</td>
<td>25,520</td>
<td>2,014</td>
<td>27,534</td>
<td>12.67</td>
</tr>
<tr>
<td>Music</td>
<td>70,360</td>
<td>197</td>
<td>70,557</td>
<td>357.16</td>
</tr>
<tr>
<td>Optometry</td>
<td>2,872</td>
<td>82</td>
<td>2,954</td>
<td>55.02</td>
</tr>
<tr>
<td>Physics</td>
<td>15,276</td>
<td>190</td>
<td>15,466</td>
<td>80.40</td>
</tr>
<tr>
<td>Public Health</td>
<td>41,111</td>
<td>906</td>
<td>42,017</td>
<td>45.38</td>
</tr>
<tr>
<td>Social Welfare/Crim</td>
<td>12,857</td>
<td>275</td>
<td>13,132</td>
<td>46.75</td>
</tr>
<tr>
<td><strong>Branch Total</strong></td>
<td>982,481</td>
<td>22,508</td>
<td>1,004,989</td>
<td>43.65</td>
</tr>
<tr>
<td><strong>Main Building</strong></td>
<td>2,200,562</td>
<td>44,075</td>
<td>2,244,637</td>
<td>49.93</td>
</tr>
<tr>
<td><strong>Total General Library</strong></td>
<td>3,183,043</td>
<td>66,583</td>
<td>3,249,626</td>
<td>47.81</td>
</tr>
</tbody>
</table>

1 Includes 22,692 documents.
2 A serial title is considered as an item.

TABLE 3
SALARY SCHEDULE

<table>
<thead>
<tr>
<th>Title</th>
<th>1967/1968 Mean Salary ($) Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td></td>
</tr>
<tr>
<td>Librarian I</td>
<td>$ 7,075</td>
</tr>
<tr>
<td>Librarian II</td>
<td>8,450</td>
</tr>
<tr>
<td>Librarian III</td>
<td>9,975</td>
</tr>
<tr>
<td>Librarian IV</td>
<td>11,575</td>
</tr>
<tr>
<td>Librarian V</td>
<td>13,725</td>
</tr>
<tr>
<td>Nonprofessional</td>
<td></td>
</tr>
<tr>
<td>Library Assistant I</td>
<td>5,250</td>
</tr>
<tr>
<td>Library Assistant II</td>
<td>6,078</td>
</tr>
<tr>
<td>Library Assistant III</td>
<td>7,044</td>
</tr>
<tr>
<td>General Assistance Clerk</td>
<td>4,650</td>
</tr>
</tbody>
</table>

The annual cost for the Richmond Inter-Campus Library Facility ICLF(N) is estimated to be about $2.50 per square foot per year to cover the cost of purchase, remodeling, equipment, utilities, and maintenance. Tables 4 and 5 summarize the space costs for the General Library.

In addition to direct labor costs, the library incurs expenses for fringe benefits and salary administrative overhead for its employees. Discussions with the University Office of the Vice President for Planning and Analysis indicated that administrative overhead is approximately 10 percent of direct labor cost. Salary administrative overhead ranges between 9 and 13 percent of direct labor, depending on job title. This study assumed that administrative overhead was 10 percent. Thus, fringe benefits plus administration total 20 percent.

Within the library itself, the costs of the librarian's office, the business office, the personnel office, and the space used by these departments were considered as part of the library overhead charge. In addition, supplies and general ex-
### TABLE 4
LABOR AND SPACE COSTS—MAIN LIBRARY 1967/1968

<table>
<thead>
<tr>
<th>Main Library Unit</th>
<th>Total FTE</th>
<th>Total Direct Salary Expenditures ($)</th>
<th>Total Assignable Square Feet (ASF)</th>
<th>Total Annual Space Cost at $5.00/Square Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisitions Department</td>
<td>66.75</td>
<td>481,763</td>
<td>13,793</td>
<td>68,965</td>
</tr>
<tr>
<td>Bancroft Library</td>
<td>35.075</td>
<td>249,335</td>
<td>31,599</td>
<td>137,995</td>
</tr>
<tr>
<td>Business Office</td>
<td>17.375</td>
<td>103,742</td>
<td>4,358</td>
<td>21,790</td>
</tr>
<tr>
<td>Catalog Department</td>
<td>76.75</td>
<td>500,420</td>
<td>6,375</td>
<td>31,875</td>
</tr>
<tr>
<td>Catalogs (Public)</td>
<td></td>
<td></td>
<td>9,899</td>
<td>49,495</td>
</tr>
<tr>
<td>Documents Department</td>
<td>26.045</td>
<td>162,584</td>
<td>31,064</td>
<td>155,320</td>
</tr>
<tr>
<td>General Reference Service</td>
<td>17.25</td>
<td>128,369</td>
<td>3,066</td>
<td>15,330</td>
</tr>
<tr>
<td>Inter-Campus Library</td>
<td>3.50</td>
<td>16,875</td>
<td>55,840</td>
<td>139,600</td>
</tr>
<tr>
<td>Facility North</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ICLF) Depository Librarians Office</td>
<td>6.75</td>
<td>83,891</td>
<td>1,566</td>
<td>7,830</td>
</tr>
<tr>
<td>Library Pers. Office</td>
<td>3.375</td>
<td>23,470</td>
<td>447</td>
<td>2,235</td>
</tr>
<tr>
<td>Library Photo. Service</td>
<td>23.30</td>
<td>141,285</td>
<td>4,665</td>
<td>23,325</td>
</tr>
<tr>
<td>Loan Department</td>
<td>86.125</td>
<td>464,667</td>
<td>100,901</td>
<td>504,505</td>
</tr>
<tr>
<td>Morrison Library</td>
<td>3.745</td>
<td>20,708</td>
<td>5,487</td>
<td>27,435</td>
</tr>
<tr>
<td>Reading Rooms</td>
<td></td>
<td></td>
<td>16,748</td>
<td>83,740</td>
</tr>
<tr>
<td>Serials Department</td>
<td>69.125</td>
<td>381,007</td>
<td>31,440</td>
<td>157,200</td>
</tr>
<tr>
<td>Storage Selection</td>
<td>1.25</td>
<td>5,813</td>
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</tr>
<tr>
<td>Undergrad. Library Selection Project</td>
<td>4.50</td>
<td>32,906</td>
<td>4,791</td>
<td>23,955</td>
</tr>
<tr>
<td>Total Main Library</td>
<td>443.115</td>
<td>2,798,855</td>
<td>322,039</td>
<td>1,470,595</td>
</tr>
</tbody>
</table>

1 Estimated.
2 Total annual cost of $2.50 per square foot.

### TABLE 5
LABOR AND SPACE COSTS—BRANCH LIBRARIES 1967/1968

<table>
<thead>
<tr>
<th>Branch Library</th>
<th>Total FTE</th>
<th>Total Direct Salary Expenditure ($)</th>
<th>Total ASF</th>
<th>Total Annual Space Cost at $5.00/Square Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>4.805</td>
<td>33,009</td>
<td>7,746</td>
<td>38,730</td>
</tr>
<tr>
<td>Art/Anthropology</td>
<td>4.045</td>
<td>24,387</td>
<td>5,307</td>
<td>26,535</td>
</tr>
<tr>
<td>Astronomy/Math/Math/Stat</td>
<td>3.94</td>
<td>23,783</td>
<td>4,009</td>
<td>20,045</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>.512</td>
<td>4,014</td>
<td>1,503</td>
<td>7,515</td>
</tr>
<tr>
<td>Biology</td>
<td>14.225</td>
<td>81,617</td>
<td>21,480</td>
<td>107,400</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3.08</td>
<td>19,276</td>
<td>11,025</td>
<td>55,125</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>3.08</td>
<td>20,104</td>
<td>5,782</td>
<td>28,910</td>
</tr>
<tr>
<td>East Asiatic</td>
<td>18.875</td>
<td>158,834</td>
<td>13,698</td>
<td>68,490</td>
</tr>
<tr>
<td>Education/Psyc.</td>
<td>13.50</td>
<td>84,532</td>
<td>13,308</td>
<td>66,540</td>
</tr>
<tr>
<td>Engineering</td>
<td>5.875</td>
<td>35,498</td>
<td>6,125</td>
<td>30,625</td>
</tr>
<tr>
<td>Entomology</td>
<td>1.52</td>
<td>9,947</td>
<td>1,796</td>
<td>8,980</td>
</tr>
<tr>
<td>Environmental Des.</td>
<td>8.08</td>
<td>54,376</td>
<td>14,522</td>
<td>72,610</td>
</tr>
<tr>
<td>Forestry</td>
<td>4.97</td>
<td>37,436</td>
<td>5,319</td>
<td>26,595</td>
</tr>
<tr>
<td>Grad. Soc. Sci.</td>
<td>11.69</td>
<td>77,415</td>
<td>23,713</td>
<td>118,565</td>
</tr>
<tr>
<td>Library School</td>
<td>2.75</td>
<td>17,679</td>
<td>3,321</td>
<td>16,605</td>
</tr>
<tr>
<td>Music</td>
<td>6.375</td>
<td>44,096</td>
<td>8,858</td>
<td>44,290</td>
</tr>
<tr>
<td>Optometry</td>
<td>1.03</td>
<td>6,897</td>
<td>1,014</td>
<td>5,070</td>
</tr>
<tr>
<td>Physics</td>
<td>3.58</td>
<td>23,958</td>
<td>4,833</td>
<td>24,165</td>
</tr>
<tr>
<td>Public Health</td>
<td>5.64</td>
<td>36,149</td>
<td>7,873</td>
<td>39,365</td>
</tr>
<tr>
<td>Social Welfare</td>
<td>3.20</td>
<td>17,439</td>
<td>4,205</td>
<td>21,025</td>
</tr>
<tr>
<td>Total Branch Library</td>
<td>120.772</td>
<td>805,446</td>
<td>165,437</td>
<td>827,185</td>
</tr>
<tr>
<td>Total Main Library</td>
<td>443.115</td>
<td>2,798,855</td>
<td>322,039</td>
<td>1,470,595</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>563.887</td>
<td>3,604,301</td>
<td>487,476</td>
<td>2,297,780</td>
</tr>
</tbody>
</table>
Cost of on-campus or nearby real estate $12.00 per gross sq. ft.
Total building construction project cost 38.00 per gross sq. ft.
Total building and site cost $50.00 per gross sq. ft.
Assignable space factor with 80 percent utilization 1.25
Effective cost of assignable space $62.50 per sq. ft.
Cost of fixtures, furniture, shelving, etc. 4.00 per sq. ft.
Total initial cost of space and furnishings $66.50 per sq. ft.
Capital recovery factor 0.06
Equivalent annual cost of space and furnishings $3.99 per sq. ft. per yr.
Annual cost of utilities and maintenance 1.00 per sq. ft. per yr.
Total annual cost for library building space $4.99 per sq. ft. per yr.

Penses as well as equipment and fixtures were included in the overhead charge and allocated to library units on a salary basis. The overhead charges for these departments and items amounted to 21 percent. The total overhead charge for library units was 41 percent (20 percent + 21 percent).

**PROCESSING COST CENTERS:**
**ACQUISITION AND CATALOGING COSTS**

As materials are introduced into the processing centers of the library, they undergo transformations which ultimately result in items ready for circulation. Figure 2 shows the flow of items through the processing centers, and Table 6 indicates unit costs. The monographs and/or serials enter at each processing center. To these "raw materials" is added a labor, space, and overhead charge. Thus, as a unit passes out of the processing center, a value is added corresponding to the cost of processing the item.

For purposes of the model, monographs are considered to be acquired from two sources—purchases and gifts. Purchased monographs enter the system at a cost of $7.44 per item. Gift monographs enter at zero cost per item. To the direct material cost for purchased monographs is added a labor and space charge of $3.04 per item. The $3.04 is the cost for the Administrative and Processing Divisions of the Acquisitions Department, plus overhead.

New monographs enter the cataloging department from the Gifts Division and the normal acquisition ordering procedure. Once in the cataloging department, a labor, space, and overhead charge of $5.40 per monograph is added. Binding, selection, and other miscellaneous charges are also added.

A monograph acquired by a branch has a final cost of $25.00, while a monograph acquired by the main library costs $19.85.

Similar flows can be observed for serials and documents. A paid serial has an initial subscription cost of $20.00. After cataloging for a new serial and proc-

| TABLE 6
| **UNIT COSTS** |
|-------------------------------|-------------------|
| **Monographs** | **Serials** |
| Purchase Price | $7.44 | $20.00 |
| Selection | | |
| Main Library | 2.84 | 2.84 |
| Branch Library | 4.00 | 4.00 |
| Acquisition Labor and Space | 3.04 | 2.65 |
| Cataloging Labor and Space | 5.40 | 49.61 |
| Serials Check-In Labor and Space | | 3.04 |
| Miscellaneous | | |
| Binding | 1.54 | 5.03 |
| Postage, Insurance, Taxes | .15 | .15 |
| **Total** | | |
| Main Library | 19.85 | 33.87 |
| Branch Library | 25.01 | 39.03 |

* Columns do not add to total since not all units are processed by all departments.*
processing (check in/entering) for all serials, the branch cost is raised to $39.03 and the main library cost becomes $33.87.

Miscellaneous charges include binding expenditures as well as postage, insurance, and taxes on acquisitions. Binding charges are made up of the cost to operate the bindery, the Bindery Preparation Division, and the Binding Pickup Department. Including space and overhead charges, this amounts to $337,197 for 55,880 items bound (excluding mending). When the total expenditure is divided between monographs and serials in the ratio 20,899 to 34,981 (1 to 1.67) and the resulting cost divided by the total monograph and serial items processed, a cost of $1.54 per monograph and $5.03 per serial results. These amounts represent proportional charges for future binding that a processed item incurs.

In addition to binding and postage charges, a received serial has added to it a charge reflecting its check-in cost. This amounts to $3.24 per serial title per year.

**Service Cost Centers: Main Library and Branch Libraries Costs**

Once the labor and space costs have been established for the processing functions, it is then possible to determine the service costs and the total library costs. Tables 7 and 8 summarize the total library cost for the system. Out of a total of $8.3 million, $3.7 million (46 percent) is spent in the process of acquisition of materials. Of this, only $1.2 million (14 percent) is for the purchase of raw materials, i.e., monographs and serials.

Total acquisition cost of $3.7 million has three components: materials cost, labor cost, and space cost. Materials are either monographs or serials, and enter the system at a unit price of $7.44 and $20.00, respectively. Gift items enter at zero cost. Acquisition labor cost includes the cost of all units involved in processing the items; i.e., acquisitions processing, cataloging, serials processing, documents processing, and branch processing. The space cost is that associated with each of the processing units.

Branch labor acquisition cost was determined by means of interviews with each branch librarian. The librarian was asked to indicate what percentage of time each employee spent in the acquisitions process. This time was intended to reflect the cost of selection of materials, typing of orders, and other associated tasks. The cost of branch processing of items (cataloging, filing, etc.) was estimated from a survey of three branch libraries.

Service labor and service space costs reflect the cost of providing service to the patron. This is in distinction to the total processing cost which reflects the cost of obtaining and processing raw materials.

**Comparison of the Costs of Circulation, Holding, and Acquisition**

Several measures have been selected for use in evaluating the performance of the library and aiding in planning and analysis. If the total cost for the branch service operations is divided by the total number of items held, a measure of the holding and acquisition cost per item is obtained. Figure 3 plots this relationship for the branch libraries. The plot exhibits a declining cost per item held as the number of items held by the library increases. Evidently some economies of scale are present. The smallest branch library, Optometry, has the second highest cost among all branches ($7.05). (Libraries cited are circled in subsequent figures to aid the reader in interpreting the data.) The Graduate Social Science Library has the
TABLE 7
TOTAL LIBRARY COST—BRANCH LIBRARIES
1967/1968

<table>
<thead>
<tr>
<th>Branch</th>
<th>Service Labor Cost</th>
<th>Service Space Cost</th>
<th>Total Processing Cost</th>
<th>Total Library Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>21,372</td>
<td>37,749</td>
<td>115,916</td>
<td>175,037</td>
</tr>
<tr>
<td>Art/Anthropology</td>
<td>18,886</td>
<td>25,931</td>
<td>66,572</td>
<td>111,389</td>
</tr>
<tr>
<td>Astronomy/Math/Stat</td>
<td>23,938</td>
<td>19,674</td>
<td>42,553</td>
<td>86,165</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>3,997</td>
<td>7,450</td>
<td>7,364</td>
<td>18,811</td>
</tr>
<tr>
<td>Biology</td>
<td>84,942</td>
<td>106,236</td>
<td>143,041</td>
<td>334,209</td>
</tr>
<tr>
<td>Chemistry</td>
<td>23,129</td>
<td>54,967</td>
<td>17,850</td>
<td>95,946</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>16,859</td>
<td>28,462</td>
<td>51,007</td>
<td>96,328</td>
</tr>
<tr>
<td>East Asianic</td>
<td>171,330</td>
<td>66,714</td>
<td>165,330</td>
<td>403,374</td>
</tr>
<tr>
<td>Education/Psychology</td>
<td>93,595</td>
<td>65,543</td>
<td>102,532</td>
<td>261,670</td>
</tr>
<tr>
<td>Engineering</td>
<td>31,657</td>
<td>29,908</td>
<td>82,706</td>
<td>144,271</td>
</tr>
<tr>
<td>Entomology</td>
<td>12,131</td>
<td>8,906</td>
<td>9,601</td>
<td>30,638</td>
</tr>
<tr>
<td>Environmental Design</td>
<td>53,969</td>
<td>71,728</td>
<td>91,641</td>
<td>217,338</td>
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<tr>
<td>Forestry</td>
<td>40,311</td>
<td>26,109</td>
<td>59,216</td>
<td>125,636</td>
</tr>
<tr>
<td>Graduate Social Sciences</td>
<td>77,108</td>
<td>117,313</td>
<td>140,752</td>
<td>335,173</td>
</tr>
<tr>
<td>Library School</td>
<td>5,646</td>
<td>15,854</td>
<td>90,856</td>
<td>112,356</td>
</tr>
<tr>
<td>Music</td>
<td>50,456</td>
<td>43,833</td>
<td>70,476</td>
<td>164,765</td>
</tr>
<tr>
<td>Optometry</td>
<td>7,515</td>
<td>4,984</td>
<td>8,325</td>
<td>20,824</td>
</tr>
<tr>
<td>Physics</td>
<td>29,777</td>
<td>24,009</td>
<td>15,666</td>
<td>69,452</td>
</tr>
<tr>
<td>Public Health</td>
<td>36,078</td>
<td>38,785</td>
<td>61,061</td>
<td>135,924</td>
</tr>
<tr>
<td>Social Welfare</td>
<td>19,022</td>
<td>20,808</td>
<td>21,934</td>
<td>61,764</td>
</tr>
<tr>
<td>Branch Total</td>
<td>821,718</td>
<td>814,953</td>
<td>1,364,399</td>
<td>3,001,070</td>
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<tr>
<td>Main Total</td>
<td>1,618,531</td>
<td>1,282,612</td>
<td>2,425,481</td>
<td>5,328,624</td>
</tr>
</tbody>
</table>

TOTAL                                      | 2,440,249          | 2,097,565          | 3,789,880             | 8,327,694          |

* Includes materials, labor, space, and overhead costs connected with nonservice activities.

TABLE 8
TOTAL LIBRARY COST—MAIN LIBRARY
1967/1968

<table>
<thead>
<tr>
<th>Unit</th>
<th>Service Labor Cost</th>
<th>Service Space Cost</th>
<th>Total Materials Acquisition Cost</th>
<th>Total Library Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Collection Loan</td>
<td>$ 435,940</td>
<td>$ 430,115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Catalog</td>
<td></td>
<td>49,405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Rooms</td>
<td></td>
<td>83,740</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference Department</td>
<td>181,000</td>
<td>14,050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserve Book Room</td>
<td>196,224</td>
<td>49,240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities Grad. Service</td>
<td>23,045</td>
<td>25,150</td>
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<td></td>
</tr>
<tr>
<td>Bancroft Library</td>
<td>301,310</td>
<td>125,360</td>
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<td>Rare Books Room</td>
<td>33,249</td>
<td>30,495</td>
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<td></td>
</tr>
<tr>
<td>Mark Twain Collection</td>
<td>17,030</td>
<td>2,140</td>
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<td></td>
</tr>
<tr>
<td>Morrison Library</td>
<td>29,198</td>
<td>27,435</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serials Department</td>
<td>49,425</td>
<td>43,482</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspapers Room</td>
<td>48,799</td>
<td>95,870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergrad. Library Project</td>
<td></td>
<td></td>
<td>$ 76,783</td>
<td></td>
</tr>
<tr>
<td>Documents Department</td>
<td>61,469</td>
<td>128,790</td>
<td>353,536</td>
<td></td>
</tr>
<tr>
<td>Maps Room</td>
<td>10,640</td>
<td>16,325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Photo Service</td>
<td>199,212</td>
<td>23,325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICLF(N) Depository</td>
<td>23,794</td>
<td>139,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Selection</td>
<td>8,196</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>1,618,531</td>
<td>1,284,612</td>
<td>430,369</td>
<td>1,995,112</td>
</tr>
<tr>
<td>Main Library Materials</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,618,531</td>
<td>$1,284,612</td>
<td>$2,425,481</td>
<td>$5,328,624</td>
</tr>
</tbody>
</table>
Figure 3
**Total Cost per Item Held**

Figure 4
**Total Cost per Unit of Circulation**
highest cost per item held, but this can be accounted for by the large amount of unused stack capacity of the library. The largest branch library (not shown on graph), East Asiatic, has the lowest cost per item held ($1.66).

Branch libraries average $2.99 while the main library averages $2.37 per item held. The overall average holding cost per item is $2.56.

The total cost per unit of circulation is plotted for branch libraries in Figure 4. Each data point represents the total cost of the branch service center divided by the total circulation for that branch. The average cost per unit of circulation is $3.53 for the General Library. Main library cost is $4.16 per item, while branch cost is $2.77.

The minimum cost per unit of circulation is reached for branches having 50,000 to 70,000 circulations per year. The highest cost per unit of circulation is recorded for the branch library having the smallest circulation. The branch library with the highest circulation, the Graduate Social Sciences Library, has a cost of $2.07 per unit of circulation as compared with the $2.77 average branch cost.

Total cost per dollar of acquisition is calculated as the total library cost by branch divided by the total acquisition cost for that branch. A lower cost per dollar of acquisition reflects the fact that more money is being put into materials than labor or space. Figure 5 shows that the Library School Library devotes a major share of its resources to acquisition. The Chemistry library, on the other hand, spends a small amount of money on acquisitions relative to labor and space. In general, small branches (Social Welfare, Entomology, Physics, and Chemistry) exhibit a much higher than average cost per dollar of
acquisition. The cost for the remaining branch libraries seems to stabilize in the $1.20 to $2.70 range.

**Comparisons of Labor and Space Costs**

Nearly $3.6 million out of $8.3 million was spent for direct labor in the General Library in 1967/1968. Since this constitutes a relatively large expenditure, it is important to try to develop tools for detecting significant changes in staffing needs.

The relation between FTE and the number of volumes held is presented in Figure 6. As the number of volumes
held increases, FTE staff increases. This relationship may be due to the manner in which staff is allocated to the branches.

When FTE and circulation by branch are compared (Figure 7), the same increasing pattern emerges. If a curve were fitted to the data of Figure 6, it would seem that the Graduate Social Sciences library and the Education/ Psychology library fall in line with the staffing-circulation relationships of the other branches.

Interviews with the Art/Anthropology and Astronomy/Mathematics/Statistics librarians have indicated a shortage in FTE for the amount of circulation of their respective branches. This seems to be confirmed by Figure 7. In addition, the graph indicates that Agricul-
ture, Biology, and Forestry are overstaffed for the amount of circulation.

The storage of materials constitutes a second area in which planning and control must be exercised. Since facilities cannot be constructed in short periods of time, management must be in a position to predict when a branch will no longer be able to store all the items it would like.

The stack capacity (in square feet) for each of the branches is plotted against the total items held by that branch in Figure 8. From the graph it is apparent that the Chemistry and Graduate Social Sciences library have room for expansion while Art/Anthropology, Engineering, and Music seem to be relatively crowded.

**Summary**

A cost-flow accounting model has been presented and data from the University of California Berkeley General Library...
has been used to illustrate the model's applicability. Unit and total cost comparisons have been made and evaluative tools have been proposed for use in library management. From the analysis, a number of conclusions can be drawn.

With respect to circulation, holding, and acquisition costs, it appears that a lower cost per item held is found in branch libraries having a large number of items. In addition, branch libraries with a circulation in the range of 50,000 to 70,000 are found to have the minimum cost per unit of circulation. The analysis also indicates that small branch libraries spend more of their resources on acquisition of material than they devote to labor.

Analyses of labor and space costs also yield useful planning information. From these costs it is possible to detect staffing needs and staffing patterns. This is done by determining the relationship between FTE and circulation and FTE and items held for the branch libraries. In addition, by determining the relation between volumes held and stock capacity across all branches, the librarian is in a position to see where construction resources can be used most effectively, or where collection weeding might take place.

ACKNOWLEDGMENTS

The authors acknowledge the generous assistance of Dr. James E. Skipper, university librarian, for making available all necessary data for the cost analysis. Mrs. Helen M. Worden, associate university librarian, was especially helpful in clarifying many of the problems incurred in the analysis of the Berkeley library. Miss Coralia Serafin conducted the survey of branch librarians. Dr. Robert M. Hayes and Dr. Patrick Wilson made valuable suggestions to preliminary drafts of this document.

BIBLIOGRAPHY AND REFERENCES

THOMAS KIRK

A Comparison of Two Methods of Library Instruction for Students in Introductory Biology

What should be taught in a library instruction program for general biology students is presented and two ways of providing the instruction are discussed. The two methods, lecture-demonstration and guided exercise (form of programmed instruction), are described, and evaluated for their effectiveness. The evaluations considered are students' ability to collect a satisfactory bibliography, scores on two objective exams on library skills, and students' attitudes toward the library instruction program. It is concluded that neither method is superior, although the guided exercise continues to be used, for the reasons given. Improvements in the program are suggested.

Library instruction should be an important component in the education of today's undergraduate students. There is not only a definite trend toward more undergraduate independent study but also a growing need for continued learning in years beyond one's formal education.1 Without library skills, a person is likely to use and reuse only a minimum number of library resources. While fundamental instruction in the use of the card catalog, Readers' Guide, and other basic reference and indexing tools is essential, it is important that colleges and universities go beyond this and develop in students a more sophisticated understanding of the library.2

To be effective, instruction in the use of the library needs to be an integral and fundamental part of the course work. Course assignments should be designed to get students to use patterns of behavior felt to be desirable in efficient use of the library.4 Here a great deal of responsibility rests with the faculty because:

If he (the student) can successfully complete the academic program by reading the text, attending lectures, and passing an examination based on text and lecture, there is little stimulus for him to build competence in research or research tools.5

This library instruction beyond the introductory level should provide an opportunity for the student to carry out the actual steps of a library search. In fact, the study described here attempts to measure the effectiveness of a library instruction technique designed to have students learn by doing. The study was carried out at Earlham College using a class of approximately 190 students in a general biology class which the students took as part of their general distribution requirement in science.

CONTENT OF THE LIBRARY INSTRUCTION

In planning any program of library
I. General types of reference books and some specific examples
   C. Monographs
   D. Serials
      1. Periodicals
      2. Annual reviews
   E. Bibliographies

II. Periodical indexes and scientific abstracting services
   A. Biological Abstracts, its organization, how to use the author and key word indexes.
   B. Science Citation Index, its uniqueness, how to use it.

III. The Library Card Catalog. The importance of using the subject heading list (Library of Congress List of Subject Headings Used in the Dictionary Catalog, 7th ed., 1966) is to be emphasized. This includes recognition and meaning of the see, see also to, and see also from references in the subject heading list. Also to be included is the use of subject heading tracings found on the author card of a book known by the student, as a method of selecting subject headings.

IV. A general understanding of the organization of scholarly scientific literature and the relationships among the various types
   A. Journal and report literature (Primary). The backbone of science or biology. The reports of original research.
   B. Journals, monographs, reviews, and review series (Secondary literature). The synthesis and surveys of science.
   C. Handbooks, dictionaries, encyclopedias, texts (Tertiary literature). Literature intended for a specific purpose, which presents only specific information, data, or definitions. In addition, literature intended as instructional material, especially literature designed to provide a broad survey of a field for the beginner. This material is based on secondary sources.

V. Search strategy. While most of the items listed above are concerned primarily with knowledge to be learned, this item (and VI) involves the activities and routines comprising search strategy. It requires knowledge of the basic search strategy: the initial use of encyclopedias and texts, followed by location of monographs and reviews, and finally a search of the periodical indexes. It also requires recognition of where to start the process with an individual search. In addition, students should recognize when a search step is no longer useful, when to retrace a step, and when to skip a step. One of the undefinable and unmeasurable aspects is the development of a personal method of search and the confidence to use it efficiently.

VI. The analysis of a subject so that the proper questions might be asked of the literature. This is perhaps the most difficult of skills to teach. This analysis is seen to include in part
the answers to the following questions.
A. What is the subject? Its content? What fields are related to it?
B. Is the bulk of information in the field newly discovered or has it been well known for a number of years?
C. What are the controversial aspects or the major questions of disagreement settled at present?
D. Who are the important scientists who have contributed to the subject?
E. Do certain organisms predominate as the objects of study for the subject of interest? (For example: *Drosophila* in genetics; *Planaria* in chemical learning)
F. How is the subject expressed by authorities in the field? Is the terminology confusing? Synonyms?

**Method of Library Instruction**

On the basis of the registration figures for the enrollment in the Introductory Biology Laboratory sections, two groups were formed for the purpose of comparing two methods of library instruction. The students had been tested on library skills learned in high school and no significant difference was found between the two groups. Both groups were then given library instruction during the first full week of classes. The instruction consisted of either a two-hour lecture demonstration by the librarian or a guided exercise done by the students individually at their own speed in the library. Identical information was presented in both forms of instruction.

**The Lecture-Demonstration**

The lecture-demonstration was a two-hour presentation covering the essentials of the search strategy plus the mechanics of using the reference tools and card catalog. The reference tools were presented in the same order they were likely to be used when carrying out a search. Transparencies were used to illustrate pages from the reference tools.

The students who received the lecture-demonstration were assigned the following readings to be completed before they came to the lecture session.

1. "Bibliography of Basic Reference Sources." This is an annotated bibliography, which the librarians had prepared, of the most important encyclopedias, dictionaries, bibliographies, and periodical indexes the students were likely to use. Annotations briefly described the titles, their functions, and pointed out their limitations.

2. "The Card Catalog." This is a brief discussion of the card catalog designed primarily to introduce the students to guide cards and check tracings in the subject half of the card catalog.

3. "Guide to Science Citation Index." A folder on how to use the S.C.I. published by the Institute for Scientific Information.


**The Guided Exercise**

This was the experimental method and was designed to guide the student through an actual library search on a particular problem. By doing this, we hoped to show him and have him experience using the methods considered appropriate for library research. This educational tool, called here the guided exercise, is a cousin to the programmed instruction technique which has proven so useful in recent years. However, the guided exercise depends on more than just going through printed frames at
one's place of study. It requires the student to go to the library and actually carry out a series of steps which encompass an appropriate search strategy as outlined earlier. Sample pages from the exercise follow.

**SAMPLE PAGES FROM SECTION 1 OF THE GUIDED EXERCISE**

Page 30

1. Mollusca (phylum)
2. Cephalopoda (class)
3. Octopodida (order)
4. Invertebrates
5. Nervous system
6. Visual discrimination—visual search
7. Octopus

Referring back to the list of key words developed in 29 will give us a complete list of key words to be clarified. What remains is to identify the actual subject heading using the subject heading list, and then to check them in the card catalog.

Check the key word Nervous System in the list of subject headings to find what the proper heading is and if there are any related terms that might be useful. What is the proper heading? Are there any related terms that would be useful?

Page 31

The proper heading is Nervous System. (There are no useful related terms.)

Check under the subject heading Nervous System in the catalog and list the useful volumes.

Page 32

The books listed under Nervous System seem to deal only with human and vertebrates, while Octopus is an invertebrate. You will notice that the heading Nervous System has several subheadings, such as Addresses, Collected works. What useful books appear under these headings?

Page 33

Nervous System—Invertebrates


Lentz, *Primitive Nervous Systems* Sci/QL/935/L4.3

Refer to the list on page 30; check key words no. 1 and 4 in the red book for their proper headings.

Page 34

The correct form of the key words is:

Mollusks
Invertebrates

Now check these headings in the catalog for useful titles.

Page 35

Mollusks

*Physiology of Mollusca* Wilbur and Yonge Sci/QL/431/W5.8

Invertebrates

*An Introduction to the Behavior of Invertebrates* Carthy Sci/QL/364/C3

*Invertebrate Structure and Function* Barrington Sci/QL/364/B3

The list of books we have developed provides a substantial list of tertiary and secondary sources useful to this topic. Normally the next step is to sift through the material you have collected and to pick out the important information and bibliographic sources that lead to additional information.

The guided exercise is divided into three sections. Section 1 emphasizes the starting places in library research: texts and/or encyclopedias. In dealing with the encyclopedia, the use of the index and the value of the bibliographies are covered. The card catalog is introduced as a locating device and is later used as a subject index to the library's collection. In the use of the card catalog, the value of the *Library of Congress List of Subject Headings* is emphasized. In addition, the use of tracings as a method of identifying subject headings is illustrated. The annual review as an important class of literature is stressed and its use to undergraduates is indicated.

Section 2 of the guided exercise deals with the use of the *Science Citation Index*. In addition to showing how it works and how it may be useful, stu-
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dents are introduced to the library's serials file.

Section 3 is concerned with the use of Biological Abstracts and the skills needed to make effective, efficient use of it. This section begins by typifying a key word index, specifically the key word index of Biological Abstracts. An illustration of how a subject must be analyzed for key words to use in searching Biological Abstracts is included. The organization of the abstracts found through the index is also presented.

It should be noted that the guided exercise is not entirely self-sufficient. There are other materials used in conjunction with the guided exercise. These additional materials are the same as those assigned to the lecture group. The difference being that the students in the exercise group read them when appropriate as they did the exercise while the lecture group students read all the items before coming to the lecture-demonstration.

EVALUATION OF THE LIBRARY INSTRUCTION

While the library instruction was given during the first week of classes and there were several informal opportunities to make use of the instruction for class work, the first real opportunity came with the first examination. This exam consisted of a single essay question on a specific subject related to the general area of the subject being studied. Four examples of the questions used follow.

FOUR EXAMPLES OF LIBRARY EXAMINATION QUESTIONS GIVEN TO GENERAL BIOLOGY STUDENTS

The Questions Given for the First Biology Examination

1. Downtown businessmen are continually concerned with the excrement covering the outsides of their buildings. They, of course, have tried many things to remove the producer of the excrement—the Starling—from urban United States. Discuss the ecology of these increasing Starling populations and the problems involved in controlling them.

2. Populations can be controlled externally by density dependent factors as well as by factors independent of density. Or populations can be controlled from within by factors which are generally density dependent. Go to the literature, which can be found in journals, and select and describe three examples of populations which are controlled by external factors. State the factors, describe the population and their fluctuations with respect to the factors. Do the same for three populations which are controlled by internal factors. You may want to begin your literature search with a secondary source; however, no answer which stops with a secondary source and does not consult the primary literature and document the example as such will be acceptable. When you have accurately described your six examples with the data, you may write a 200-word summary on the significance of factors which control these populations.

3. Energy flow in the ecosystem: The transformation of solar energy to chemical energy by plants conforms to the laws of thermodynamics:

Solar energy assimilated by plants = Chemical energy of growth of plants (including seeds, exudates, etc.) + Energy of respiration

For herbivores the situation is similar:

Chemical energy eaten by heterotrophs = Chemical energy assimilated by heterotrophs + Chemical energy of faeces produced by heterotrophs

Furthermore:

Chemical energy assimilated by heterotrophs = Chemical energy of growth of heterotrophs (including production of young and excretory products) + Energy of respiration

At each transfer of energy heat is evolved. The end result conforms to the laws of thermodynamics and may be ex-
pressed: Solar energy entering the system equals heat energy leaving the system. Our interest lies in what happens to the energy after it enters the systems and before it leaves. Refer to an ecological journal (or any other primary source) available in the library, and provide one specific example which illustrates each of the three above equations, i.e., three separate examples. Your examples should include the specific.

4. Document three examples of homology and three examples of analogy in the evolution of plants or animals. Is phylogenetic classification the best way to do it, or would a more ecological-oriented taxonomy be better? What are the advantages of each?

The students were asked to spend approximately five hours in the library researching the assigned topic. Then, on the basis of the data collected, they were to write a paper, of no more than 1,250 words.

This type of examination was repeated three more times, making a total of four questions for the two terms. The faculty graded these exams. In addition, the librarian evaluated the bibliographies of a randomly selected sample of the students in the two groups. The bibliographies were evaluated on the basis of five criteria: (1) the appropriateness of the references cited to scholarly work in science and biology; (2) the inclusion of the most important secondary sources; (3) the inclusion of a variety (within certain limits) of primary sources; (4) the total number of references; and (5) the format of the bibliography.

The results of the evaluation of the bibliographies which accompanied the papers written for Library Exams 1 and 2 are recorded in Table 1. The means for the bibliography scores for Exam 1 were 18.60 for the lecture group and 16.34 for the exercise group. A test for significance of difference showed that the difference was not significant. On the second exam the bibliography scores of 20.13 (lecture group) and 21.63 (exercise group) were significantly different at the .20 level of confidence.

### TABLE 1

<table>
<thead>
<tr>
<th>Bibliography Evaluation Results</th>
<th>Lecture Group</th>
<th>Exercise Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median bibliography score of Biology Exam #1</td>
<td>18.60</td>
<td>16.34</td>
</tr>
<tr>
<td>T-test for significance of difference</td>
<td>0.55*</td>
<td></td>
</tr>
<tr>
<td>Average grade on paper with bibliography</td>
<td>B-</td>
<td>B</td>
</tr>
<tr>
<td>Median bibliography score of Biology Exam #2</td>
<td>20.13</td>
<td>21.63</td>
</tr>
<tr>
<td>T-test for significance of difference</td>
<td>1.65**</td>
<td></td>
</tr>
<tr>
<td>Average grade on paper with bibliography</td>
<td>B</td>
<td>A-</td>
</tr>
</tbody>
</table>

* Not significant
** Significant at the .20 level

At the beginning of the second term of the course, two library tests were given. The first, “Library Test Number One,” was the traditional multiple-choice-matching type, and was constructed by the experimenter. The second exam was titled the “Controlled Association Exam” or “Library Test Number Two.” This controlled association technique was first developed by W. S. Verplanck, Department of Psychology, University of Tennessee. It makes use of a procedure which Edward Green, Institute of Educational Technology, Teachers College of Columbia University, refers to as “controlled association.” Briefly, it consists of presenting a list of stimulus words to the student. The student is instructed to respond to a stimulus word by writing down up to four words which he thinks are most meaningfully associated with the stimulus word in the context of the course.

The responses are tabulated and a score is assigned to each of the response words. For those words which are uniquely good associations, a score of
three points is assigned. For those words which are clearly erroneous associations, a score of zero is assigned. For the vast number of intermediate and ambiguous responses, a score of one is assigned. Clearly, the decision as to what constitutes a uniquely good or a uniquely erroneous response to a given stimulus word is subjective. However, it is probably no more subjective than a determination of any other response where other testing techniques are employed.

The advantages of this procedure are twofold. First, scoring can be automated, thereby yielding the reliability and ease of other objective testing methods such as multiple choice. Second, the universe of responses from which the student may choose what he believes to be correct is not limited, as in multiple choice, which presumably gives some of the advantages of the short answer, essay-type examination.

There are two drawbacks to this procedure. One is that if students are aware of the nature of the examination, they may prepare for it simply by learning a set of associations by rote. In this study the students were unaware of this type of examination before they actually took it. The second disadvantage has to do with the volume of material which is collected from a group of students in one of these testings. The sheer number of responses calls for computer tallying and scoring.

The results of these two tests are included in Table 2. In summary, the differences that exist are not significant and the test results therefore do not demonstrate the superiority of either instructional method.

In order to get some feedback from students, a student evaluation of their library instruction was given at the end of Term II. In addition, the biology faculty gave a student evaluation of the entire course. This latter evaluation included some questions on the library component of the course.

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>RESULTS OF LIBRARY TESTS #1 AND #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median score on Library Test #1</td>
<td>Lecture Group</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>23.30</td>
</tr>
<tr>
<td>T-test for significance</td>
<td>4.26</td>
</tr>
<tr>
<td>of difference</td>
<td>0.98*</td>
</tr>
<tr>
<td>Median score on Library Test #2</td>
<td>Lecture Group</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>48.30</td>
</tr>
<tr>
<td>T-test for significance</td>
<td>19.23</td>
</tr>
<tr>
<td>of difference</td>
<td>0.73*</td>
</tr>
</tbody>
</table>

* Not significant.

On the library’s evaluation form students were asked to rate the library instruction which they had received. Two of the questions provide the most useful information; this is presented in Table 3. This table gives the percentages of students who checked the various categories.

The student evaluation results (Table 3) indicate that the students’ opinions of their library instruction did not differ significantly. Also, their opinions as to what they learned do not differ between the two groups. A significant difference does appear when asked whether the students had personal help from the librarian (Table 3). Of the group that had the guided exercise, only 43 percent had personal help, while 65 percent of the lecture group had such help. There are two possible explanations. One, the exercise group may not have needed as much help; however, the results of the students’ opinion of what they learned conflicts with that reason. Second, the lack of extended (two hours) contact with the librarian during the lecture may have inhibited the guided exercise students from asking questions. Which mechanism is operating here remains an unanswered question but is one which deserves serious investigation.

Table 4 presents a portion of the results of a much larger evaluation which
TABLE 3
RESULTS OF STUDENTS’ EVALUATION OF THEIR LIBRARY INSTRUCTION

<table>
<thead>
<tr>
<th>Degree to Which This Method of Instruction Was Helpful</th>
<th>Lecture Group</th>
<th>Exercise Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very helpful</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Helpful</td>
<td>66</td>
<td>54</td>
</tr>
<tr>
<td>Not very helpful</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Useless</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Did you receive personal help from the librarian in seeking out literature for your test questions?

- Yes: 65
- No: 35

TABLE 4
RESULTS OF A PORTION OF THE BIOLOGY EVALUATION WHICH IS RELATED TO LIBRARY INSTRUCTION

<table>
<thead>
<tr>
<th>Statements Presented to Students</th>
<th>Total Number Responses per Statement</th>
<th>Percentage of Total Responses per Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. In the Biology course, the library was . . .</td>
<td>96</td>
<td>30%</td>
</tr>
<tr>
<td>A. overemphasized</td>
<td>29</td>
<td>69</td>
</tr>
<tr>
<td>B. appropriately emphasized</td>
<td>66</td>
<td>1</td>
</tr>
<tr>
<td>C. not emphasized enough</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>II. Comment briefly on the library examinations as an educational device</td>
<td>87</td>
<td>92</td>
</tr>
<tr>
<td>A. valuable</td>
<td>80</td>
<td>92</td>
</tr>
<tr>
<td>B. not valuable</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>III. Examinations and quizzes other than the library type exams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. My lab section . . .</td>
<td>98</td>
<td>46</td>
</tr>
<tr>
<td>1. used them</td>
<td>45</td>
<td>46</td>
</tr>
<tr>
<td>2. didn’t use them</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>B. My lab section . . .</td>
<td>37</td>
<td>49</td>
</tr>
<tr>
<td>1. should have used them more</td>
<td>18</td>
<td>49</td>
</tr>
<tr>
<td>2. should not have used them more</td>
<td>19</td>
<td>51</td>
</tr>
<tr>
<td>C. I learned ——— from them than from library examinations</td>
<td>42</td>
<td>48</td>
</tr>
<tr>
<td>1. less</td>
<td>20</td>
<td>48</td>
</tr>
<tr>
<td>2. the same</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>3. more</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>D. I worked harder for . . .</td>
<td>42</td>
<td>93</td>
</tr>
<tr>
<td>1. library examinations</td>
<td>39</td>
<td>93</td>
</tr>
<tr>
<td>2. other hour exams</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

the biology faculty carried out covering the entire Biology 11 and 12 course. The portion included here covers the students’ responses to questions about their opinions of the examinations.

The students’ overall evaluation of the library component of the course as revealed in the second student evaluation was very positive. This enthusiasm is quite encouraging since they also felt that the library examinations required more work than other hour exams.

Conclusions
It is expected that a carefully designed instructional program which takes into account a clear set of objectives and the structure and objectives of the course in which the program is used should be a superior method in comparison with the less original, more straightforward lecture. However, the results of the experiment do not provide cause for selecting the exercise over the lec-
ture. Of the four different sets of evaluation results, three show no difference of significance, while for the one that did, the level of significance was low (.20 level). Table 5 presents the T-test for significance of difference calculated from the four sets of data.

<table>
<thead>
<tr>
<th>Type of Evaluation</th>
<th>T-Test Calculation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliography scores from Biology Exam #1 (Table 3)</td>
<td>0.55</td>
<td>None</td>
</tr>
<tr>
<td>Bibliography scores from Biology Exam #2 (Table 3)</td>
<td>1.65</td>
<td>.20 level</td>
</tr>
<tr>
<td>Library test #1 (Table 4)</td>
<td>0.98</td>
<td>None</td>
</tr>
<tr>
<td>Library test #2 (Table 4)</td>
<td>0.73</td>
<td>None</td>
</tr>
</tbody>
</table>

The students' evaluation of their library instruction and of the library aspects of the course also provides no basis for choosing one method over the other. As was discussed earlier, the lecture group did ask for more individual help than did the exercise group. However, because there may be factors at work other than the superior skills of the exercise group, it is not possible to use the student evaluation results to support any claims about the superiority of one method over the other.

One must conclude, therefore, that the instructional method is superior neither in its ability to teach the use of the library, nor in its ability to promote an appreciative attitude toward the library. Thus, any decision as to which method to use in subsequent classes must be based on other criteria.

The faculty and the library staff have continued to use the guided exercises in teaching the use of the library to general biology students. Once it was established that the exercise would do as adequate a job as the lecture, we began to look at other factors which might recommend one method over the other. In the following paragraphs, the reasons we have continued to use the exercise are outlined. In addition, some improvements in the program that were implemented in later years are discussed.

The criteria used in making a judgment as to which method to use included: (1) the time needed to prepare the materials necessary for teaching under the two programs; (2) the student time spent in the instructional program; (3) flexibility of the two methods; and (4) the potential burden caused by the guided exercise's reliance upon actual use of the library during the instruction.

The time spent in preparing the exercise and the lecture, because of their great similarity, was essentially the same. Therefore, initial investment of time is the same. The long-term investment of time, however, would be greater for the lecture method. The exercise, once prepared, needs only minor revisions. Related to this is the flexibility which the program permits: Any time an individual student or group of students needs the instruction, the guided exercises are available. Furthermore, a student can proceed at his own pace. Because of its division into three parts, it can be done in stages so that the entire four or five hours needed for completion does not need to be invested at one time. Furthermore, if a student needs instruction on only one aspect, he need do only the appropriate section of the exercise.

Finally, the question of whether the exercise burdens the library collection, especially key items that every student uses, must be faced squarely. Is the library willing to have certain items used...
as heavily as is required for the use of the exercises? There are certain steps that can be taken to alleviate the problem. These steps include: (1) When large groups of students are involved, give the exercise to part of the group at different times; (2) have several exercises in widely different areas; (3) purchase multiple copies of the most heavily used items. These measures will not solve the problem; they will only reduce its seriousness.

**Improving the Instructional Plan**

In order to make the exercise method of instruction more efficient and useful, certain necessary changes were carried out when the program was repeated. These changes included:

1. Additional guided exercises in other subject areas were written. These new exercises were on: "internal factors in population size control" and "chromosome mapping using mitotic recombination." This variety, as suggested earlier, did help to relieve much of the crowding and heavy use of some materials. This did not, however, prevent heavy use of the basic tools—encyclopedias, dictionaries, the card catalog, and periodical indexes.

2. The assignment of the exercise was spread out over a two-week period. Because the exercise was considered a laboratory assignment it could be alternated with another laboratory assignment. In this way one-half the class did the library exercise one week while the other half of the class did another laboratory assignment. The next week the assignments were reversed.

3. One of the major failures of the initial experiment was the faculty's ignorance as to the best sources for the examination questions. In order to correct this problem and to help insure that only questions which could reasonably be answered on the basis of the library's holdings were used, all questions were searched by the library staff prior to giving them to the students. This search made possible a more detailed evaluation of the bibliographies associated with the examination questions.

It is significant that a study of the correlation between the grades received from the faculty on the library examinations and the bibliography scores received from the librarian revealed greater correlation in the second year than in the first.  

**References**

1. Luella Snyder, *The Second Kind of Knowledge*, p.3.
5. Snyder, ibid., p.7.
6. Unfortunately, nothing has been published on this technique. This author's information comes from communication with Louis Wilcox of the Earlham Biology Department. Wilcox has had contact with Edward Green of Columbia University. The computer programs used to score this exam were revised from those used at Columbia University.
7. The correlation figures were as follows: original experiment -.16 (lecture group), and .53 (exercise group); second-year class sections .80, .80, .87, .82 (all used exercise).
The Academic Library Looks at Union Lists

Computer-based serials listings are rapidly becoming a popular method by which libraries make their serial holdings available. In addition, there is increasing pressure on libraries to participate in serial union lists. Because expenditure of staff time is an important factor in such participation, various kinds of union lists are examined in order to determine the most effective and least costly ways in which a library can have a list and attendant benefits for its own purpose, and also join in cooperative efforts.

By now, many libraries have either produced or are aware of the advantages of computer-based lists of serials for local needs. In addition, libraries realize that their participation will be requested in union list projects which are being planned on both regional and national levels. It is the purpose of this article to consider whether a library can satisfy the demands placed upon it for cooperative ventures and at the same time meet its individual needs. Three major developments have prompted such a discussion: (1) the proliferation of regional lists of serials; (2) the development of a program for a national serials data bank; and (3) the current state of computer technology as it relates to union lists.

The Local List

It is neither difficult nor uncommon for an individual library to produce a computerized list of serials. Most libraries will feel that the time and expense are worthwhile when compared with the limited products of a wholly manual operation. The most obvious advantages of using a computer to perform this operation are the ease of producing multiple copies and the possibility of continuous updating. In addition, the data can be manipulated to produce lists by subject, vendor, or lists of incomplete files. The serials lists thus become extremely useful for both the staff and clientele of the institution. Such a list can be distributed to other libraries who may wish to have it, but these individual lists are of limited use for the purpose of interlibrary loan. Producing a list at the local level allows the library considerable freedom in choosing the form of entry and type of programming best suited to its needs.

The Union List

Union lists of serials serve the dual purpose of providing bibliographic information as well as identifying locations where titles can be found. If their growing number is any indication, union lists are much needed by libraries. It is useful at this point to examine the kinds of lists in which one can participate, their possible cost, advantage, and problems for the large research library.

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THE STATE LIST

The state list serves the purpose of making known the resources of its public, special, and academic libraries. In such a list, therefore, similarity of collections is not the motivating factor. It has been pointed out that smaller libraries in the state are more willing to cooperate in such a list since they will have less to report and will also benefit more because the burden of interlibrary loan is placed on the large library. All large academic libraries in the state need to participate in order to ensure mutual benefits. Although both small and special libraries often have titles which the academic library might need, the library has to consider whether the cost of participation in terms of staff time matches the usefulness of the state list for the academic library.

REGIONAL LISTS

Regional lists can include any number of libraries in various groupings. The groups can be arranged by similarity of collections and goals, by size of library, etc. Regional lists can theoretically provide a greater number of titles for interlibrary loan purposes than a state list. In addition, such a grouping can be the basis for cooperative acquisitions and storage and weeding programs. In order to be effective, however, the group must agree on common goals such as form of entry and the kinds and amount of titles which will be included. The costs for these activities should be shared so as to produce savings for all.

SPECIAL LISTS

An example of this kind is ACCESS—the list of scientific serials prepared under the jurisdiction of the American Chemical Society. A list of this type is of importance primarily to a defined group of people. The cost of participation in such a list must be measured in terms of the need it fulfills for the individual library.

NATIONAL LISTS

The Union List of Serials and New Serials Titles provide the widest general coverage of location and bibliographical description now presently available. However, not all locations for a title are given, a factor which led in the past to the development of lists at the local and regional level. Currently in the development stage is the National Serials Data Program. The announcements for this project indicate that it will offer a wide variety of services, such as information on holdings and location for all serials, publishing and dissemination of special union lists by categories, and machine-readable data for local processing. While this program seems admirable in its definition and scope, it will probably be some time before it is fully operational. The pilot project is dealing now with medical and scientific serials, although ultimately it will be expanded into other disciplines. Operating within the national framework would provide certain advantages: (1) greater coverage of titles; (2) standardization (of format); and (3) greater access to government programs and funds.

COST OF PARTICIPATION

The cost of participating in union list projects can be measured in the amount of staff time used in the reporting of holdings and in the subsequent updating procedures. Although a library may be willing to cooperate in union list projects, it must seriously consider the economics of filling out numerous checking editions and continuously reporting to diverse agencies. If there is any increasing demand for this kind of participation, a library would either have to hire additional personnel or di-
vert present staff from the daily operation which most libraries can ill-afford. Sending a locally produced tape is usually not feasible unless it is compatible with the master tape of the producer-agency. If the library's own list can be used as the basis of a union list, this is of course desirable, but cannot be expected. Given this situation, the following actions are possible: (1) the library can develop its own list and ignore other projects; (2) the library can develop its own list and participate in a few selected union lists which it feels it cannot ignore; (3) the library can set up guidelines for participation in other projects and hopefully develop its own list in conjunction with one of these projects; and (4) the library can participate in all union list projects.

There is no question but that there is some cost involved when a library develops a list on its own. Included is the staff time needed to prepare the records; the hiring or training of computer personnel; the expense of running a computer; and supplies. If the library can obtain the information and services it needs in another way, this kind of individual expenditure would not be necessary. It is also true that a library which has a large interlibrary loan operation will find it easier with a comprehensive union list at its disposal. The third alternative is, therefore, probably the most feasible.

If a library has need of setting up guidelines for participation, one or more of the following criteria should influence the decision: (1) evenly balanced sharing of interlibrary loan requests; (2) the possibility of shared acquisition programs; (3) the possibility of having lists produced as a substitute for local records (vendor lists, ceased titles); (4) the availability of lists of the individual library holdings by subject to satisfy the demands of local users; (5) a format which can be utilized by different libraries (i.e., sufficient cross-references for variant forms of entry); and (6) representation in the decision-making process.

The National Serials Data Program shows the most promise since it would lead to standardization, fulfill most of the criteria mentioned above, and greatly reduce duplications effort. Most of this will be accomplished by utilizing computer technology. A recent article has pointed out, however, that advances in automation have led thus far to an increase in regional lists rather than to processing at the national level. If the national program is capable of providing services for both large and small libraries in the near future, it would seem wasteful to devote so much money and effort to local solutions.

However, the increasing demands placed on libraries by their clientele and the need for interlibrary loan information have tended to favor the development of the regional plan. Many of the regional lists now being developed have been planned so they can be adapted by other library systems. Such lists as the Union Catalog of Medical Periodicals (New York) and, in particular, the Intermountain Union List of Serials have no limitation to their capacity or flexibility.

A proposal for a regional list in lieu of a state/national/or local list at this time would have the following advantages: (1) utilization of work (programs, tapes, etc.) done by other libraries; (2) a central processing area, i.e., several libraries can absorb the cost of processing and editing the data; (3) use of a computer and computer personnel primarily engaged in library related activities—the cost shared by participating libraries; (4) a larger data base than could be provided by an individual library or by the libraries within a single state; (5) interlibrary loan cooperation because of geographic prox-
imity; and (6) possibility for cooperative acquisition plans to offset the rising cost of serials.

In order for the center to be effective, the following requirements would have to be fulfilled: (1) defining a group of libraries which would be willing to cooperate and would benefit equally from the project; (2) utilization of programs compatible with the MARC/COBOL format of the Library of Congress; (3) possibility of on-line interrogation to save time and transmit machine-readable information; (4) ability of the program to add or suppress certain kinds of information to allow for local variation; (5) production of lists by subject categories; and (6) frequent updating.8

A regional plan developed along these lines is NELINET, the joint venture of the five New England State University Libraries, which has already produced a shared cataloging program. The program utilizes the MARC II format and can provide individual services for participating libraries. A regional center can be established as a separate entity or can be located at a designated library, the participants sharing jointly in the cost of maintaining staff and equipment. A study of the costs and relative merits of the type of center would have to be made before any decision could be reached.

In summary, the adoption of a regional plan at this time would include greater benefits for the individual library by expanding the resources available to it. Current computer technology can provide the flexibility needed to make the computer product useful for individual participants. Any proposal for a regional union list, whether on state or type-of-library level should consider the plans underway at the national level. In this way the regional center can act as a link in the network when the national program is operable by being able both to accept from and communicate information to the national center. If such steps as those listed above are taken, regional plans need not be looked at as an attempt to deflect energy from efforts being made at the national level, but as a positive step toward greater cooperation and communication. At the same time, needed services will be provided to the faculty, students, and staff at the library.

A library can only decide for itself to what extent it can cooperate with requests for union list participation, but a library which is involved in a working, cooperative project can afford to be more discriminating about its involvements.

REFERENCES

To the Editor:

In the appropriate words of a current Dustin Hoffman flick, “Who Is John Corbin, And Why Is He Saying Those Terrible Things About Ellsworth Mason?,” Corbin (CRL 32:316, July 1971) protests too much. He would present himself as a knight in technological armor and Mason as a throwback to the date-due stamp stone age, but the printout just doesn’t read that way. The “diatribe-harangue” is found in Corbin’s letter, not in Mason’s recent articles on computer implementation failures in libraries (CRL 32:183-96, May 1971; Library Journal 96:1671-76, 15 May 1971). The emperor still wears no clothes. Saying that Mason “damns man himself” is really too much (speak for yourself, John). I really think mankind is faced with enough problems without worrying about the ultimate fate of the 360s and 914s in libraries (IBM, not Dewey). In Corbin’s own words, “Any muddle, mess or mischief caused by the machine is a reflection and magnification of the man controlling it.” Obviously Corbin felt reflected upon, and certainly his remarks were overly magnified by printing them in CRL.

Corbin implies that Mason’s study was too limited. I had the impression that he was viewing the cream of the crop, or at least a representative sample from which conclusions could be drawn. True, Mason may have raked up a lot of muck, but only because it was knee-deep around him. And who, besides Corbin, will seriously question Mason’s background and serious intent in approaching the Altar of Mechanistic Revelations? The only thing one “knows immediately” from Corbin’s letter is that the “closed mind” belongs to him, not Mason, unless you consider the growing number of decision-makers in the library world who, on the basis of “limited knowledge and information,” sell out to the pressures to conform to the Great Machine Con Game (cost analyses, anyone?). Mason makes no pretense to having a “perfect library”; the Mason letter preceding Corbin’s states, “Hofstra can match UBC’s circulation rise, with a manual system that is not working to our satisfaction.” If Corbin is so dedicated in his attempts to “cope with some of the technological problems” facing libraries, let him begin by getting his facts straight and avoid attacking people rather than issues.

The following lines on contemporary poetry (Time 98:68, 12 July 1971) may also be applied to the mechanical “mess” brought about by advocates of computerized libraries at any cost:

... its fanciers all too often react like ornithologists examining a duck. The thing walks like a duck, its primaries are all in place, and its admirers-makers of ducks in their turn—discourse appreciatively on the exquisite joinery of wing and socket, the ingenious solution to the problem of melding emphatic beak with awkward neck. What nobody seems to notice—or if they do, are too polite to remark—is that the god dam bird does not fly.

Well, if I read Mason correctly, he is telling us to shoot the bird, or at least restructure it. Or we could continue to duck the issue. He would not have us bow down before the “Golden Calf” of the computer; those so quick to kneel at the altar should expect to soil their knees from the excessive bull strewn about it. Corbin’s letter is a prime example of what happens to those with “computer-right-or-wrong” mentalities; in the words of Mason, out fly their brains.

Ron Carver
Public Library Consultant
New Hampshire State Library
Concord
To the Editor:

This summer at the University of Buffalo's School of Information and Library Studies, I am beginning work toward an MLS. There is much concern here about the librarian's image and the need for her or him to develop some political sophistication and professional self-awareness. How pleasing it is therefore to read Ellsworth Mason's biting and witty article, "The Great Gas Bubble Prick't or, Computers Revealed..." in the May issue of CRL.

The specifics of whether or not Mason is making valid criticisms of the computer are something that will become clearer only as the future arrives. What is gratifying—and here I speak as a historian—is that the very publication of the article indicates that librarianship is a profession worth identifying with. Governments, and indeed civilizations, rise and fall much to the degree that critical awareness comes either from within or from without the group in question. The Pentagon papers indicate the self-deception of the administrations of recent presidents, and the most self-deluding of the chief executives have fallen the hardest.

Mason has clearly raised the ire of many librarians. He is an excellent writer and perhaps he is pushing his own image, i.e., attempting a bit of self-advertisement. Nonetheless, in presenting a strong case against computers and in stirring up controversy, he is promoting at least one of two things. Librarians may show their unworthiness for existence by avoiding real issues through unjust counteroffensives or they may face up to some hard issues by meeting Mason half-way and reevaluating their own actions and ideals.

Elizabeth A. Storch
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Buffalo, New York

To the Editor:

Corbin's contention, in defense of the computer (CRL 32:316, July 1971) that man being fallible, the machine must be fallible, supports rather than refutes Mason's argument against unqualified acceptance of the computer for library use. Are we to spend the huge sums involved in setting up computer programs only to codify and perpetuate the results of man's intellectual limitations? Most of us have been laboring under the misconception that the enormous cost is justified because the systems will eventually eliminate human error. Now we are told that we need perfect people to insure that we will have perfect machines.

Technological problems are not the only ones facing libraries today. Cost problems are becoming far more serious, and not even the most ardent advocates of automation can claim that computers will reduce an organization's expenses, at least not for many years to come.

Also, isn't Corbin overreacting when he refers to the distinguished Mason's article as a "cutesy diatribe-harangue"? Somehow it seems he protests too much.

(Mrs.) Constance M. Walker
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Houston

To the Editor:

Messrs. Massman and Olson seem to be out of touch with today's world. They end their article on centralized book selection (CRL 32:271-79, July 1971) with the question, "Why not?" This is why not.

Automation, super-efficiency, mass conformity, robot-like jobs are not necessarily desirable. Their idea smacks of cold, lifeless authoritarianism: read exactly 7% books a day, to the subject specialists; take it and like it, to the participating libraries. Reputed causes of unrest on campus are impersonality and authoritarianism. Messrs. Massman and Olson's plan would augment this.

Almost everyone will agree that collections are uneven and individual, but then, so are students and other people. This is not automatically an evil. If a particular book is outstanding in its field, it will be picked up sometime in some journal and get into some library. Great ideas and discoveries often occur almost simultaneously at different places to different people. Witness the race to discover DNA and to do the first human heart transplant, to name just two such events. Don't worry, they
won’t be lost to the world.

The local faculty and librarians need to keep up with all current materials anyway, and each does it according to his interest and sense of responsibility about it. Centralized book selection would not eliminate this, but only frustrate their opinions.

Let’s bear in mind Delbruck’s principle of limited sloppiness, “You should be sloppy enough so that the unexpected happens, yet not so sloppy that you cannot figure out what happens after it has happened.” (Eiduson, B.T. Scientists, Their Psychological World, Basic Books, 1962, p.126)

Automation is great for eliminating extremely dull, monotonous jobs, but let’s keep individual judgment, personal responsibility, and just plain humanity in book selection.

N. D. McReel
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Fogler Library
University of Maine, Orono

To the Editor:

I read rather with a sense of despair V. F. Massman and D. R. Olson’s article “Book Selection: A National Plan For Small Academic Libraries”; here is an instance where two university librarians have recognized and acutely analyzed a central problem in the administration of smaller college libraries and then have proceeded logically to a totally fallacious solution. Possibly discussion of the assumptions underlying their proposal cannot be entirely in the spirit of dialog so entrenched in the professional literature now is an approach which appears to see the answer to all library problems in increased uniformity of procedures, centralization, mechanization, cost-analysis, specialized expertise, etc.

To be sure the problem of limited available time from qualified personnel and the chaotic coverage by the reviewing media of increasingly voluminous subject literatures present formidable obstacles to the organization of effective selection programs in the smaller libraries. But the answer is, in fact, not the surrender of responsibility but more and better qualified personnel who have broad subject capabilities and who see that they must make a sensitive and systematic understanding of their clientele’s literature requirements their business. Also, further improvements in the overall structure of the reviewing literature could be tremendously helpful. Say, for example, a journal complementary to CHOICE which would utilize volunteer subject specialists to survey both the scholarly and general reviewing media for titles of relevance to undergraduate collections, possibly with excerpts from the original reviews and a classification-rating scheme such as that used by Science Books.

In any case the authors seem to me to overestimate the relative importance in an undergraduate situation of an ultimate extension in the survey of reviewing literature as opposed to carefully planned and intelligent intension—the evaluation of relatively fewer titles by qualified local personnel. The fact is that the feverish pursuit of the total basic, core, balanced collection is pretty much of an illusion. There are not annually published 5,000 or 6,000 titles which are indispensable to a small college collection. A substantial proportion of these titles would be, in terms of any reasonable formulation of potential demand, of marginal or no value to any given undergraduate collection, whatever their intrinsic value. Neither can any but the smallest library afford to chase after the “balanced” collection to the extent of neglecting the development of current and retrospective strength along the differential lines of locally important ideas, themes, and events.

It is probable that the cost of the percentage of the 5,000 titles which would be effectively useless to any smaller college library would approximate the $16,000 the authors say would be saved by their scheme, not to mention the long-term costs of storage and maintenance of these titles and their supporting records. Anyway, one wonders who wants to aim at acquiring the same 50,000 titles over the next decade as everyone else?

Such blanket “selection” might be thought useful in at least two situations: the library is too poor to—or does not want to—implement even a minimally adequate selection program; or it is sufficiently affluent that it can afford to supplement current core-acquisition with very extensive supple-
mentary buying. In the first case, the library would seem to get what it deserved; in the second, it would, in many cases, be engaged in a relatively wasteful use of resources and, with larger book funds, would be duplicating the coverage of more comprehensive blanket order buying.

Meanwhile the librarian, or chief administrator, in such a situation may dabble in reference work, preside over the unpacking of the books, or perhaps just drop out of sight with his cost studies, slide rule, flow charts, etc. I would suggest that the centralization of what remains of substantive professional library work be carefully distinguished from supporting technical processes which should be rationalized and centralized and that book selection, properly understood, must remain at the local level.

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To the Editor:

The article by McGrath (CRL, July 1971) is interesting and I would like to add my experiences in measuring in-library use. The figures in the McGrath study showing in-house use are low for some reason or another. Very likely correlating the number of books found on tables with the number of books taken out is not going to give us the whole picture. There is, I suspect, a great many books and journals looked at in the stacks and reshelved by the user.

My reason for doubting low figures of in-library use are based on two surveys. Within one done in 1969 it was stated by the sample of 458 that they used 1,044 books and journals on-site while only borrowing 200 books.1 If these figures are accurate, it appears that for every book charged out five books are used inside the library.

A second survey done in 1971 with a sample of 551 showed that the users consulted 3,085 books and journals in the library and borrowed out of the library 417 items.2 This would then show for every book borrowed seven to eight items are used in the library.

These figures are of particular interest if thought of in the context of limiting library circulation policies. It looks like the majority of book and journal use occurs inside the library and perhaps by allowing books to leave the library this serves as a frustration to in-house users. Obviously some books need to be borrowed, but nevertheless, the fact of such high in-house usage may be a guidepost for future trends in circulation policies. With photocopiers increasingly involved in book and journal usage, the noncirculating academic library could be a possibility. With this in mind, seating for large numbers of students is a necessity in new buildings.

The nature of teaching and studying also is indicated by these studies. For a student to “use” seven books to every one taken out shows either a significant intellectual facility on the students part or perhaps a not very difficult or demanding assignment.

Needless to say, just what is “use” has yet to be answered. Is it a matter of the time spent over a book, or is it the volume of notes taken, or is it “use” if answers are found? Does use mean going beyond the title page or the table of contents? It would probably be interesting but exasperating to try to define library use.

John Lubans, Jr.
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Library cooperation, though universally acclaimed as a desirable goal in theory, has often been difficult to put into actual practice. It is heartening, therefore, to have brought to our attention a report on cooperative development of resources conducted by the New York Metropolitan Reference and Research Library Agency (METRO) as part of the statewide 3 R's program. SHARES (an acronym for Shared Acquisitions and Retention System) is a METRO program that seeks to test two closely related concepts: shared acquisitions and joint storage of library materials.

The report under review begins by tracing the early steps taken by METRO to develop shared acquisition techniques through studies made by Hendrik Edelman and Eugene Boice. Edelman's earlier recommendations form the basis for many of the ideas contained in this report.

For purposes of experiment, the Ad Hoc Committee on SHARES selected five types of materials in which shared acquisition projects might be attempted. The following were included: (1) college catalogs; (2) U.S. government documents; (3) American doctoral dissertations on microfilm; (4) serials indexed in the H. W. Wilson company indexes; and (5) monographs analyzed in the Essay and General Literature Index. The report describes the procedures, problems, and some of the solutions devised in trying to develop viable shared acquisition programs in these five areas.

However, not enough time has elapsed to make a definitive evaluation of these five projects. The author of the report believes, therefore, that SHARES will need at least another year to test and evaluate the ongoing projects, to assess financial implications, and to determine whether the steps taken have been correct.

In the area of shared retention and storage, the author feels that careful consideration must be given to methods of linking METRO with the Center for Research Libraries in Chicago and the Medical Library Center in New York. If SHARES were to launch an independent retention program, Simkin insists that it must develop as a complement to the Center for Research Libraries and should not attempt to do locally what is now being performed effectively on a national level. SHARES should consider storing locally only such material which is infrequently used, but which is in sufficient demand to necessitate regional acquisition and preservation.

Some interesting general conclusions are formulated in the report: (1) Any cooperative enterprise, such as SHARES, is likely to be more successful if resources are added to a library's holdings rather than taken away. Therefore, shared acquisition should precede any plan for shared retention. (2) A cooperative acquisitions program will not relieve each library's responsibility to maintain a strong collection for the use of its own clientele. (3) The goal in cooperative acquisitions is the reduction of overall costs, and at the same time continuous growth in total available resources. (4) Resources on microform are important in any cooperative acquisitions program as well as in a retention and storage plan.

What SHARES has accomplished to date cannot be described as spectacular. But the wonder is that important first steps in li-
Library cooperation have been initiated. SHARES must be rated high for effort. This reviewer is of the opinion that SHARES could accomplish a great deal more if adequate funds for cooperative action were made available. This is the rub.

It is quite clear that large-scale library cooperation of any type cannot flourish without introducing funds from outside sources not heretofore tapped. While the current picture seems rather dim inssofar as additional federal funds are concerned, librarians must push for state aid with greater vigor than ever before.—Alex Ladenson, The Chicago Public Library.


With the growing enthusiasm for comparative library studies, new surveys of foreign libraries should be noted with interest by the library profession. In this context John Ferguson's Libraries in France is especially welcome, offering as it does a state-of-the-art look at the French library scene. Considering the paucity of materials on French libraries that have been published in English, this book is a useful entry into a rather embarrassing void.

Written in a concise, factual style, Ferguson's book is a sort of Guide Bleu to the world of librarianship in France. The author, librarian of the British Council in Paris, surveys numerous aspects of the French library scene, from the structure of the national library board to the operation of mobile bibliobuses in remote areas. His study emphasizes the rather arresting fact that, by contrast with the country's rich cultural heritage, development of a nationwide system of library service has been, until recently, an unfortunately low-priority item.

The text consists of thirteen short chapters; details concerning the history, development, and purpose of various types of French libraries are summarized. Municipal, general, university, and children's and school libraries are among the varieties thus treated; space is devoted to a compact discussion of phono record libraries as well. The section dealing with professional organizations and the status of education for librarianship in France brings hard-to-find information together in useful fashion.

Of particular interest is a chapter devoted to La Lecture Publique. Issued in 1968 under the auspices of a governmental committee, La Lecture Publique was a study of the state of French library service, and is to French libraries what the Public Library Inquiry was to the American scene. Persons interested in the scope of public library service available in France circa 1968 will find Ferguson's résumé of the report helpful indeed; a summary of the means being employed to expand service is included as well.

Short bibliographies accompany each chapter of this book, and there is an index. The chapters on university and public libraries contain particularly handy tabular summaries of statistics regarding library building programs. To sum up, Libraries in France is a compact statistical survey of the subject and should prove most useful as a ready reference tool.—Cathleen Flanagan, University of Utah Libraries.


One result of the unprecedented increase in the number of colleges and universities, and of the expansion of the older institutions, in the last decade, is the growth of interest in the development of institutional archives, apparently exceeding the rate of growth of archives in the previous decades. The concern of most institutions for their archival responsibilities is still inadequate, but there is certainly a recognized need for help by many academic librarians and scholars in gathering and administering their institutions' records of permanent historical value.

Previously, there has been little available in print relating to the specific role of the college or university archivist, other than periodical articles, or a few pages in a general manual on archives. The most direct assistance has been found in two slim volumes of conference and institute proceedings, also emanating from the University of Illinois, and in which Maynard Brich-
ford, its university archivist, played a large role.

The monograph in hand is a more systematic approach to the work of the university archivist, valuable in instructing the newcomer to the field, but with useful reminders also for the experienced archivist. Although the specific emphasis of this manual is on scientific records, so much of the text has equal application to university archives generally, that to speak only of its use to the specialist would deny other college archivists knowledge of a valuable tool. Sufficient mention is made of the broad principles which must be part of the archivist's mental outlook, to provide a foundation for further study of the archival method. Standards for evaluation and retention of records, the real test of any archivist, are clearly and concisely phrased for comprehension by the novice.

Brichford has done a rather remarkable job in compressing detailed procedures into an abbreviated step-by-step summary of the methods used in a well-organized depository, with practical hints on processing drawn from his own experience. To this he adds the special approaches needed for the particular forms in which historical records may appear—official files, personal papers, and the nontextual records for which the archivist must be prepared.

The historian or archivist particularly interested in the records of science will undoubtedly find special value in the description of files accumulated in scientific research, and in the clues offered to the types of materials worth permanent preservation. Brichford will probably stimulate many of his colleagues to search for the raw materials of scientific history not previously seen as valuable to the archives.

A nine-page annotated bibliography guides the reader to other published sources of greatest value to the archivist. One need not point to the bargain price (one dollar) as a measure of the value of the pamphlet.—Miriam Crawford, Temple University.


Those who think that cooperation among types of libraries is like the weather will discover, through Ralph Stenstrom's bibliography, that many libraries have passed the "talking" stage and are actually "doing" constructive, interlibrary-type projects. The 383 references to the literature provide a convincing argument that cooperation is very much alive and well in the library world.

The bibliography was compiled for the Illinois State Library by Stenstrom and Galen E. Rike with the assistance of other members of the Library Research Center staff at the University of Illinois. The included citations were identified through a literature search of *Library Literature*, 1955-1968, several existing bibliographies on library cooperation covering the period 1940-1954, and an announcement which appeared in the major library journals requesting descriptions of cooperative interlibrary projects. Stenstrom might have undertaken a more exhaustive search and could have examined the references in all pertinent articles and reports. Even with these limitations (cited in the introduction to the bibliography), the majority of references and the substantive projects were no doubt identified through the search strategy used.

Coverage was limited to projects described in publications during the period 1940-1968, and to unpublished reports on projects identified through responses to the request appearing in library journals. The included references "deal with cooperation involving more than one type of library," and describe programs in actual operation or, in some instances, in the proposal stage. Appropriate foreign projects are included when published in English. The traditional library classification of public, school, academic-research, and special libraries is used in discussion of types of cooperation throughout the bibliography.

The annotated entries are arranged chronologically by year and month of publication. Chronological arrangement is an effective grouping device, particularly in an area which has experienced increased activity since the addition in 1966 of Title III to the Library Services and Construction Act.

The indexes provide good multiple-access to the included references. The reader can
approach the references by author name, organization or cooperative project name, type of cooperative activity, or by groupings of types of libraries involved in cooperative projects.

The annotations are well written, in the 100-150-word range, and are indicative to informative in style. They give the reader enough information to determine if he needs to examine any given publication.

A review of the literature prefaces the bibliography. Discussion of the content of the referenced articles is arranged by groupings of types of libraries involved in cooperative projects (e.g., academic-school-public; academic-public; school-public). Interlibrary cooperative projects are wide-ranging in scope and include such activities as bibliographical centers, catalog card exchanges, cooperative and centralized acquisitions, cataloging and processing, cooperative and coordinated selection, duplicate exchanges, facsimile transmission, interlibrary delivery service, last copy retention, library development plans, photoreproduction of library materials, statewide networks, storage libraries, teletype networks, union catalogs and lists, and wide area telephone service.

The bibliography should be in the personal library of any librarian interested in cooperation among types of libraries. It is a well-planned, well-done compilation which will prove very useful in sorting out the interlibrary cooperative projects from those which profess to include different types of libraries but all too often don’t.—Lawrence E. Leonard, University of Illinois, Urbana.


Cecil Roseberry's brief volume is an "official" history, published by the State Education Department and written to commemorate the 150th anniversary of the founding of the New York State Library in 1818. It may be true that the genre is often eulogistic and dull, but this one is a bright, sparkling exception. It is a delightfully balanced combination of scholarly care and popularization. Few librarians will be able to put it down, in any sense of the term, and it is certain to become a best seller among state publications.

The State Library at Albany was born in the same session of the legislature as the Erie Canal, and its nineteenth-century history seems to have been almost as turbulent as the canal's. Roseberry recounts the development, from unpromising beginnings, of what was to become the most distinguished of the American state libraries in vignettes of the people who directed and influenced it, of the constantly changing political and social climate of the state, of the pervasive problems of proper quarters, and of the growth of the library's collections.

Five absorbing chapters are devoted to the accomplishments of the most famous of the state librarians, Melvil Dewey, and his often zany career. The cast of characters, particularly in the early days of the library's existence when the part-time job of state librarian was part of a rampant spoils system, includes a brace of strange but engaging upstate political types. Notable was James Maher, Irish immigrant, war hero, wholesale grocer, and boss of Albany's Fourth Ward, who, when he was appointed state librarian by Van Buren, could at least claim some prior subprofessional experience since he had had a hand in the pillaging of the town library in York, Ontario, during the War of 1812. Another early appointee as state librarian was referred to by an Albany newspaper as "one of the greatest pot house brawlers and political blackguards in the federal ranks."

The appointment of the nonpolitical Board of Regents as the trustees of the State Library in the 1840s, and their insistence upon a full-time state librarian marked the beginning of a serious effort to develop the library. During the remainder of the nineteenth century, and especially during Dewey's tenure from 1888 to 1905, it became a model of efficient management for its day, even while the problem of suitable quarters was a persistent one.

A suspenseful chapter describes the disastrous fire of 1911 which destroyed large portions of the library's collection on the eve of a move into a new and safer building. Ironically, the near destruction of the collection brought attention and funds that, despite tragic losses of irreplaceable materi-
als, helped the library on the way to its present distinction.

This absorbing volume is a fitting memorial for the ending of an era in Albany's library history as the State Library prepares to move again in the 1970s, this time to spectacular quarters in Governor Rockefeller's controversial South Mall project.

Some scholars (but not many) may begrudge Roseberry his decision to forego footnotes, and the magazine-size, double-column format is probably unfortunate, but the illustrations are appropriate, generous, and contemporary, and the bibliography and index are adequate. The book is uncopyrighted and is in a limited edition, so there is probably a reprint publisher counting the pages right now. No library history collection anywhere can afford to miss this one, at any price. — John Farely, State University of New York at Albany.


Too often, and especially early in the planning stages, academic librarians in their zeal to establish new college or university libraries lose sight of the institution's purpose and goals, frequently because they are misinformed or function exclusive of them. In their recent work, The Function of the Library in a College of Advanced Education, Harrison Bryan and Evelyn Lorna Hean have carefully presented a valuable and decidedly generic study which addresses itself to the peculiar library needs of a college situation in Australia. The colleges of advanced education in Australia most nearly approximate American four-year colleges, such as normal schools and four-year state colleges, but are given over to more innovation in the preparation of graduates for employment in business, government, and the social services.

This work is filled with statistical information and is scrupulously documented, serving two important purposes. First, it provides, in somewhat lengthy detail, an account of the educational purposes, learning-teaching concepts, and other pedagogical methods that the colleges of advanced education must consider with regard to the development and use of appropriate library resources and services. Second, the library attitudes, standards, and other evaluative devices employed by academic librarians in such a formative venture are cogently presented and critically discussed. While the work is basically a report that provides recommendations for the development of library resources and services, the investigations and careful thinking on the included topics provide several innovative approaches toward the role of a library in an academic setting.

This combination of institutional goals, aggregation of quantified standards, and the interpretation of other planning elements contributes to a well-organized report that should serve as a guide for either the development of a new academic library or the upgrading and/or evaluation of an existing one. While the study may be highly localized and peculiar to the Australian academic scene, the use and modification of standards such as the Clapp-Jordan ones, coupled to a very careful analysis and discussion of strengths and weaknesses related to these standards, provides a highly worthwhile approach too often lacking in the professional literature. Furthermore, the discussions on modified formulas, particularly with regard to staff size, presents some highly original thinking about the role and importance of librarians, especially in the reader services areas, that it would behoove many academic library administrators to carefully consider.

I would recommend that most academic libraries purchase this work, even though it may soon be dated, or its recommendations ignored. There are a few caveats however that should be known, such as some minor typographical errors, the format being less than inspiring and the writing often pedestrian and overdone in places; but essentially, these minor irritants do not detract from what is a highly interesting and valuable study. This work should serve to enlighten academic librarians about the planning process in developing appropriate academic library resources and services for institutions of higher learning dedicated to the preparation of a new breed of college graduate. — Robert P. Haro, University of Maryland.

Black Writing in the U.S.A., a Bibli-


Good recommendations for improved bibliographic control of resources on the black experience have come out of many of the black studies workshops recently held. Despite these suggested guidelines, a flood of bibliographies have appeared whose usefulness and value are difficult to ascertain. The two works reviewed here do not belong to that category; they are contributions in some measure to the bibliographical literature necessary for the student of black studies.

Black Writing in the U.S.A. unfortunately was not published in its entirety due to a curtailment in funds. From what this reviewer could glean from the compiler's terse preface, a comprehensive bibliography of black writing—including citations to works by individual authors—was originally planned. Had the compiler been able to complete the task as initially planned, the work would have been an invaluable resource for scholars, librarians, and other persons interested in black studies.

Included in the compilation are four sections: archives, bibliography and reference, periodicals, and collections. The first section contains brief descriptions of selected collections of materials on the Negro. Citations to sources of more detailed information on the various archives are a useful feature.

The bibliography and reference section includes citations to monographs and bibliographies in books and periodicals. Some publishers' lists and library lists also appear. There are no annotations.

The list of periodicals, which includes several titles not widely known, could be improved by expanding the bibliographic data presented. The final section, a compilation of collections, is useful as a list and fairly complete. Critical annotations would have been particularly helpful to acquisitions librarians for selection purposes. This is an invalid criticism, however, if the author's purpose is merely to list sources.

This writer hopes that Ryan will be able to publish another edition with the omitted sections on general background and individual authors. A preface detailing the scope of the work, intended audience, and criteria for selection will be essential. Some of the bibliographic inaccuracies must also be corrected: for example, the Review of Race and Culture listed as an Atlanta University periodical is actually the subtitle for Phylon.

Afro-Americana is a comprehensive (over 3,000 citations) guide to the collection on the Negro in the Ohio State University Libraries. It is arranged by main entry within some twenty-five subject areas. An author and personal name index as well as a title index facilitate the location of individual citations. Entries are not annotated, and pagination is not given.

The compiler noted in her foreword that unpublished theses are not included. Access to dissertations on the doctoral level is not a problem, but there exists a recognized need for the identification of masters' theses on the Negro. The value of this compilation would have been enhanced by the inclusion of citations of theses not identified in other sources.

Periodical titles appear as entries under the subject division. It is therefore somewhat difficult to locate titles with ease unless one happens to chance upon the subject the compiler has chosen.

Afro-Americana should prove of value as a location guide and a ready reference tool for identifying works under broad subject divisions. It is suggested that other university librarians begin to evaluate their collections of Afro-Americana, including not only standard resources such as books and periodicals, but nonprint and original source materials as well.—Saundra Rice Murray, Howard University.


One might imagine, considering the phenomenal increase in both the interest and the literature in library automation, that the
task of compiling a reader would be easy. Such is not the case, however, especially to those with some expertise in one or both of the areas concerned, for generally speaking, the literature is not too useful.

Kaplan has approached his subject with a definite purpose in mind and with a central theme. His concern is primarily with the demands made upon librarians, their response to such demands, new services made feasible by the computer, administrative organization for automation, and two specific problems emphasized by computerization, copyright, and the production of book catalogs. The theme of potentiality and the use of the computer as a tool is well woven through his selections and serves to maintain the compactness of the volume.

The readings are divided into seven sections: the challenge, varieties of response, theory of management, new services, catalogs and the computer, copyright, and information retrieval testing. “The Challenge” is represented by three selections, one from the National Commission on Libraries in which the computer is truly recognized as a tool, or a means to an end, not the end itself. The community is charged with making full and effective use of this tool and its potential. The other two selections represent prevalent, opposing attitudes so often found in the literature, but usually not so well stated. These are a kind of cautious negativism and pie-in-the-sky. “Varieties of Response” covers projects at Harvard, UCLA, Stanford, LC, Chicago, and a survey by Systems Development Corporation. The one contribution to the theory of management reflects the experience at Harvard in coping with the problems of full-scale mechanization. Much of it is cautionary but it is well written and may supply some guidance to future entrepreneurs. Some practitioners may question whether it is truly realistic.

“New Services” is a group of readings including technical information centers, selective dissemination of information, network prospects, INTREX, and extralibrary services. One of the most valuable aspects of this group is that they illustrate the need to look in nonconventional places for good literature in the field. One is a dissertation, another is a preliminary report to a national study, the others are periodical articles. As before, they are carefully chosen and in a sense actually represent new services to most library communities. “The Catalog and the Computer” is represented by two selections, possible-feasible-desirable, and cost. The one selection in copyright touches briefly on the legal problems of traditional copyright and traditional materials and does not deal with file security or computer programs. The final selections on “Information Retrieval Testing” appear somewhat out of kilter with the rest of the work. It is true that the computer has played a large role in analysis and testing of retrieval languages and indirectly therefore affects services. This appears to be the justification for inclusion.

There appear to be only two troublesome aspects of the readings. Several of the articles are five or more years old. While one might question whether this makes much difference in the library field per se, it does definitely date some of the viewpoints. Another factor which librarians are particularly aware of is the amount of futuristic dreaming. Several of the articles are proposals and some are written in the future tense. This is included to destroy some of the effectiveness of the arguments. Neither of these two factors, however, detracts from the overall effectiveness of the readings. Kaplan is to be commended in his selection, faithfulness of purpose, and editorial cohesiveness.

As stated in the introduction, the readings are for the library school student and the librarian not very familiar with the literature. The reviewer suggests that the audience is much wider and should include anyone interested in libraries as service organizations, the computer and its potential, and the interaction of the two.—Ann F. Painter, Drexel University.

OTHER BOOKS OF INTEREST TO ACADEMIC LIBRARIANS

American Library Association, Children’s Services Division, Library Service to the Disadvantaged Child Committee. I Read, You Read, We Read; I See, You See, We See; I Hear, You Hear, We Hear; I Learn, You Learn, We Learn. Chicago: American Library Association, 1971.


Lyon, John K. An Introduction to Data


Urban, Paul K., and Lebed, Andrew I.,


The following abstracts are based on those prepared by the Clearinghouse for Library and Information Sciences of the Educational Resources Information Center (ERIC/CLIS), American Society for Information Science, 1140 Connecticut Ave., N.W., Suite 804, Washington, DC 20036.

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The first phase of an ongoing library automation project at Stanford University is described. Project BALLOTS (Bibliographic Automation of Large Library Operations Using a Time-Sharing System) seeks to automate the acquisition and cataloging functions of a large library using an on-line time-sharing computer. The main objectives are to control rising technical processing costs and at the same time to provide improved levels of service. Phase I produced a prototype system that operated in the library using typewriter terminals. Data preparation and data control units were established; regular library staff were trained in on-line input and searching. After a nine-month period of operation, the entire system was evaluated. The requirements of a production library automation system were then defined. Findings are presented on shared facilities, economy and file integrity, the performance of on-line searching, terminal performance, staff and resource commitments, transferability, and the human aspects of system development. Recommendations are presented with respect to feasibility, economic factors, management, staffing, documentation, terminal equipment, and national planning.


A design for a nationwide system of library statistics is provided along with specific recommendations for its structure and development. The proposed system depends upon a much more active role of the states and upon the input of research, interaction of advisory groups, in-service training, and relatively small amounts of money at strategic points along the way. An important factor of the system is the formation of an advisory group on library statistics within the U.S. Office of Education which would aid in the implementation of the proposed system, and aid in the ultimate formation of a data bank system. In the long range, the statistical needs of all users of library data can best be satisfied by an electronic National Data Bank System. This data bank is absolutely dependent upon the standardization of terminology; the systematic collecting and editing of data; the in-
terlocking, coordinated efforts of many advisory groups; the design of an electronic system by highly skilled professionals; and possibly a consortium of federal, state, and private agencies.

**Media and Instructional Technology in the Library, A Bibliography of Readings.** By Bruce E. Dewey and Richard Howard. Syracuse University, New York, Center for Instructional Communications. 1971. 25p. (ED 049 805, MF—$0.65 HC—$3.29)

The 108-item annotated bibliography provides both the practicing librarian and the student with a comprehensive source of literature in the field of media librarianship and instructional technology. The bibliography is divided into four parts. Part I deals with media and the library and is divided into the following four sections: (1) Sources of Materials, (2) Evaluation of Materials, (3) Cataloging of Media, and (4) Audiovisual Equipment. Part II deals with instructional technology and is divided into the following twelve sections: (1) General Readings, (2) Psychology, (3) Research, (4) Systems, (5) Instruction, (6) Communication, (7) Media and Production, (8) Evaluation, (9) Administration, (10) Facilities, (11) Change, and (12) Innovations. Part III provides a description of several periodicals related to instructional technology and the library, and Part IV provides a name index.


An effort has been made to include all writings that have contributed to or illustrate the development of archival principles and techniques in the U.S. The major part of the guide is organized according to archival functions, rather than according to types of archival agencies. However, writings dealing exclusively with one type of records and archives—government, business, college and university, church—are listed under the appropriate chapter. The guide includes the most relevant writings published through June 1969.


Each of the objectives of the Five Associated University Libraries (FAUL) is discussed in terms of the effort FAUL has made to attain them during the past twenty-six months. These are: (1) to develop coordinated acquisitions policies; (2) to develop means for sharing resources; (3) to develop shared storage facilities; (4) to develop easy and rapid communications systems among the membership; (5) to develop compatible machine systems; (6) to explore and develop other areas of cooperation; and (7) to develop a coordinated policy for long-range growth. Fiscal year 1970–71 will be decisive for FAUL, as it gropes for an identity. Embedded in this procedure is a continual testing of the limits which cooperative acts can reach and a concomitant gradual delineation of what each library's objectives are in joining together.


The major objectives of the study were to produce a storage/transportation model which minimized (1) the cost of storage space for book materials, and (2) cost of transportation for book materials. In minimizing these costs, they are considered in relation to the time required to provide service. The data used in the study include land and construction costs, library space usage, and transportation data. These data analyzed on an annual cost-per-volume basis enabled a comparison of all of the alternative models on a common denominator. Two versions of the final model are presented. The first presents a solution to the delivery problem at the current rate of transaction between the five member libraries. Of the alternatives studied, United
Parcel Service provides the optimum time-cost trade-off in this case. The second version proposes that a high density storage library be built, incorporating a computer-controlled Randtriever system. This configuration solves not only the storage space problem but also enables the utilization of FAUL-operated vehicles, offering the cheapest and fastest delivery service when the loads are high enough. The centralization of these materials-handling services can also support other services which the libraries may wish to consider, e.g. computerized coordinated acquisitions, serials control, status file interrogation, and microform services.


The three objectives of this study of the Five Associated University Libraries (FAUL) are: (1) an evaluation of the FAUL Acquisition Committee; (2) a feasibility study of cooperative resource development; and (3) guidelines and recommendations to analyze the research collections. It is determined that for effective cooperative resource development, FAUL must assign priority of fulfillment to its goals of (1) increased value, (2) attainment of optimum collection size, (3) improved resources and services, (4) consideration of user needs for a more relevant system, (5) adequate budget allocations for research resources, (6) controlled special collections, (8) improved acquisitions and dissemination procedures, (9) increased research and development, (10) fostering professional education of all library personnel, and (11) determination and strengthening of FAUL's image. FAUL's planning program for cooperative resource development must include a long-range, comprehensive plan that enjoys the total commitment of the five university libraries.

Interviewing for Counselor and Reference Librarians. By Patrick R. Penland. Pitts-

burgh University, Pennsylvania, Graduate School of Library and Information Sciences, 1970. 140p. (ED 049 802, MF—$0.65 HC—$6.58)

Interviewing as it is developed in this publication is a disciplined encounter technique for counselors and reference librarians who wish to be more effective in serving the individual patron. There seem to be two polar types of patrons: those who will not talk, and those who will not stop talking. Without training, librarians tend to rush patrons to the books rather than take the time to encourage the patron to discuss his purposes and interests. The following subjects are discussed: (1) orientation to the interview; (2) patron-librarian interface; (3) counseling in librarianship; (4) interpersonal aspects of librarian counseling; (5) psychological dimensions of librarian counseling; and (6) interview question analysis. The appendices contain examples of the nondirective interview, the directive interview, and functional interviewing.


The fifteen speeches presented at the 25th Annual Conference of the Canadian Library Association are: (1) Presidential Address; (2) Theme Day; (3) The Revolutionary 70's, Are We Ready; (4) The Prime Mover: The Role of the National Library; (5) What You Expect Out of Machines; (6) Twenty-Seven Million People: Four Million Square Miles: Where Shall We Live in 1980; (7) Library Systems in the Future; (8) Library Systems Into the 70's, Public, Regional and Schools; (9) Systems and Associations in the Seventies; (10) Implications for Individual Libraries of the Library Systems Made Possible by Computer and Communications Technology; (11) Roses Among the Hardware: or, Gutenberg Is Alive and Well; (12) The

The use of microforms in academic environments has become a general source of concern to all those involved with it. To some extent, the issues underlying the concerns of these groups can be summarized as a question: How can an academic library achieve full benefit from microform media? To develop information and to probe the difficulties of managing and using library microforms, a conference was held at the University of Denver in December 1970. The overall perspective of the conference treated the library administrator as a mediator between competing interests and forces that are operative in the sphere of academic microform applications. The purposes of the meeting were to foster understanding and use of microform technology in academic libraries; enhance the utility of educational microforms through the exchange of ideas; and, inform the academic library community and industrial sector of microform techniques, systems, and requirements in an academic setting. Taken as a whole, this document reports constructive comment for the development of more effective microform utilization in the academic environment in differing situations.


The conference was held because of a recognition by the Committee on Scientific and Technical Information (COSATI) Task Group on Library Programs and the Federal Library Committee of a fundamental responsibility to interact in a meaningful way with the nonfederal sector—the state, local, and private users of federal information resources. This interaction will continue through a variety of communications approaches. This conference offered an opportunity for a face-to-face tutorial in which all parties could present their views, their needs, and their limitations. The daily program format provided morning presentations by representatives of federal information organizations, and afternoon presentations by participants representing nonfederal users of federal information products and services. The broad subject area covered on the first day of the conference was “Sharing Federal Information Resources with Research Libraries”; “Availability of Select Federal Information Services and Products” was covered during the second day. The discussion periods provided alternate views and candid criticisms. The needs of research libraries and the shortcomings of the federal information resources were the two most constant topics. The value of the conference was expressed by calling for a second one.
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William Byrd of Westover
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By Pierre L. Marambaud, University of Nice, France. ix, 297 pp., illus., index. $12.50

William Byrd, a prominent eighteenth-century Virginia planter and politician, was the most noteworthy writer in Southern Colonial America. His letters, diaries, and publications are witty, skillfully written, and have proved also to be valuable historical sources. Despite the historical importance of Byrd's writings, his last biography was published in 1932 before the discovery of the three secret diaries. It has long been out of date. Marambaud has studied all of Byrd's writings thoroughly and has finally fashioned a comprehensive, unbiased history of Byrd and of eighteenth-century Virginia.

Tidewater Towns
City Planning in Colonial Virginia and Maryland

By John W. Reps, Cornell University. 360 pp., 206 illus. and maps, bibliog., index. $17.50
(Colonial Williamsburg)

This study traces the development of colonial towns in the Chesapeake Bay area of Virginia and Maryland. Known as the Tidewater, the area includes the earliest permanent American settlements; these were organized from the outset according to a form of urban planning. Reps discusses the forms and designs of town planning used by the colonists, and he traces their development up to the nineteenth century. Particular attention is paid to Annapolis and Williamsburg, both innovations in North American town design. The Williamsburg section is of special interest because Reps offers the first credible explanation for the old mystery of how the town was planned so that its streets would converge to form the letters W and M. Numerous illustrations of original town plans and views are included, many of which have never been published before.

The Collapse of Orthodoxy
The Intellectual Ordeal of George Frederick Holmes

By Neal C. Gillespie, Georgia State University. 300 pp. (tnt.), frontis., bibliog., index. $9.50

The Collapse of Orthodoxy is the only complete biography of George Frederick Holmes, the first president of the University of Mississippi and later professor of history and political economy at the University of Virginia. He spent his life conveying to Americans new ideas from nineteenth-century Europe. As a distinguished essayist, reviewer, and teacher of history, literature, and economics, Holmes contributed much to the thinking of his times. His philosophical debates—particularly those with Comte about positivism—are vividly described here and are of considerable importance.

White, Red, and Black
The Seventeenth-Century Virginian

By Wesley Frank Craven, Princeton University. 128 pp. (tnt.), index. $5.75

White, Red, and Black examines and compares the three races who lived in Virginia during the seventeenth century. Each is described according to its origin and cultural background, its population in America, its settlement locations, and its relations with the other two races. Craven's lectures correct many assumptions long held by historians, and they open the way to a greater understanding of the beginning years of our nation. Extensive notes amply document the author's conclusions and provide a helpful summary of other scholarship on the subject.

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Robert Sobel, New College, Hofstra University
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