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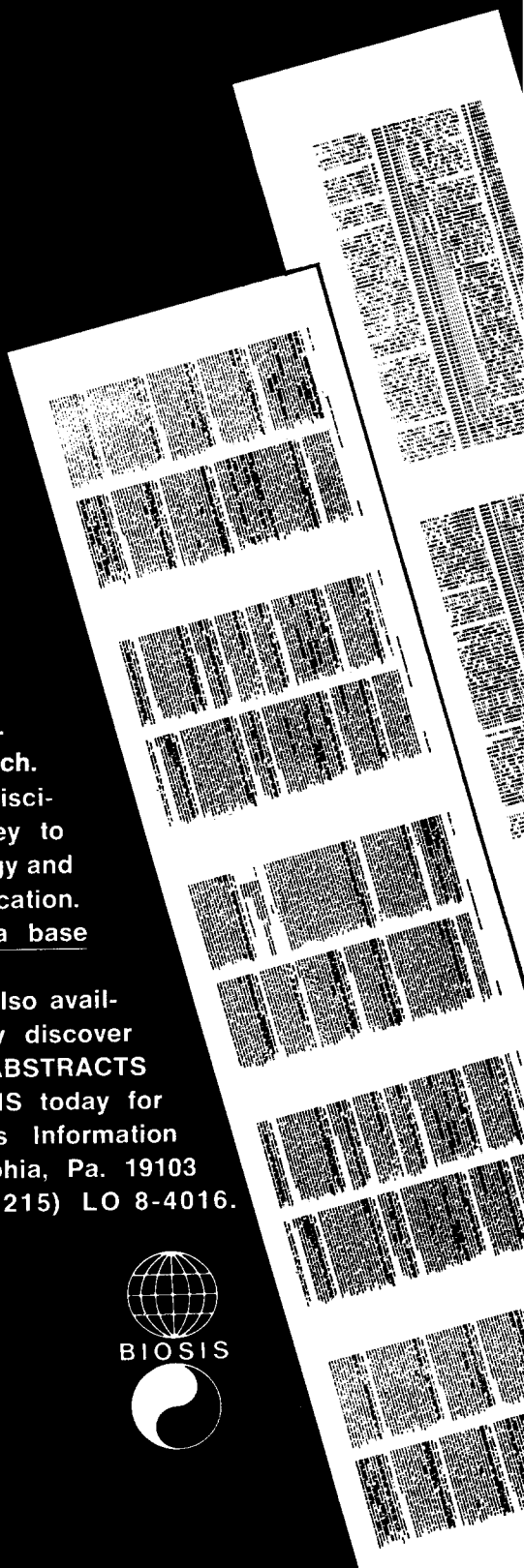

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LETTERS

Background Adjusted

Bill Eshelman errs in his letter to *SL*, March 1974, p. 6A, when he suggests a connection between Hilary Burton's recent work and her earlier work with me. Her SDI program for Agricultural Research Service is entirely her own accomplishment and owes nothing to the FAMULUS program with which she was associated in Berkeley.

Theodor B. Yerke
PSW Science Literature Services
U.S. Department of Agriculture
Forest Service
Berkeley, Calif. 94701

The following letter, addressed to Thomas F. McCormick, Public Printer, appears here with the permission of the author.

Protest!

I am writing to protest, in the strongest possible terms, the size of recent price increases announced by the United States Government Printing Office.

The attached list [not reprinted here] represents periodicals of substantial importance to our staff and clients. The average price increase for these titles between 1972 and 1974 is 257%. While I am aware that the Government Printing Office is now expected to operate on a self-sustaining basis, as the Acting Superintendent of Documents recently stated in a letter to a colleague of mine, I have not seen anything in print nor heard any speech in which increases of such magnitude were justified in specific terms, such as actual production costs on a per-title basis.

Librarians have had a long history of problems with the Government Printing Office. I have no intention of delineating these problems in this letter, since you must be even more aware of them than I am. However, in our particular case, we have tried for years to get GPO to send us only those copies of periodicals for which we subscribe. If we subscribe for two copies of a title, we often get four, or even six. Through our subscription agent, we have tried by phone and letter to straighten this problem out, only to be told that the "best thing to do is to discard the unwanted issues, because we might be taken off the mailing lists altogether" if we become too importunate.

In my opinion, it is disgracefully wasteful to operate in such a manner; and absolutely unjustifiable to cover the costs of such waste by raising prices to customers by more than 250% in two years.

In addition to the outrageous price rises, GPO's decision to disallow subscription agency discounts unless shipments can be made in bulk to the agent who will then have to remail to his customers has the effect of adding a further 25% price rise for those subscriptions, in addition to delaying delivery of necessary periodicals to subscribers.

The Government Printing Office has the obligation of making public information available in printed and other formats suitable for public use. No reasonable person, be he librarian, businessman, or general information seeker, objects to a reasonable price increase to cover increased costs. Until proof to the contrary in terms of a solid, detailed justification is produced however, I consider the recent price increases to be exorbitant at best, and an attempt to deny the public access to information to which it is entitled under law at worst.

I eagerly await a solid justification for your recent policies regarding prices.

Shirley Echelman
Chemical Bank Research Library
New York, N.Y. 10015

Send It Back

In a recent letter to the editor [Special Libraries 65 (no.1): 9a (Jan 1974)], Mr. Phillip Rochlin reaffirmed an ever present problem for acquisition librarians—the journal reprint "disguised" as a book. This problem seems to occur more frequently in the scientific and medical areas where much of the new information produced originates in journal format.

Mr. Rochlin should feel free to return the reprint *Polymerization of Heterocyclics* to Marcel Dekker, processed or not. If all acquisition librarians would follow this practice, publishers would find no financial benefit in reprints or collections of journal articles, and hopefully this frustrating practice would be discontinued.

Deborah K. Yedlin
Washington University
School of Medicine Library
St. Louis, Mo. 63110

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Congress and the Congressional Research Service

Charles A. Goodrum

Library of Congress, Congressional Research Service, Washington, D.C. 20540

■ The Congressional Research Service performs many duties for Congress. It now has a new charter and its services have been expanded. The attitudes of the Congress, the functions of the committees governing the CRS, and the future of the service are reviewed.

ONE of the more precise and definable forms of special librarianship is that of the "legislative reference service"—a device that operates in one form or another in all of the state governments and in the national legislature at Washington. All of these facilities have developed from a single prototype invented by the Wisconsin Populists before World War I, and the idea has now been driven to its broadest elaboration in the Congressional Research Service of the Library of Congress.

In 1970, the Congress passed a piece of legislation entitled the Legislative Reorganization Act which substantially expanded the traditional mission and staff of the CRS. Since then, there has been considerable interest from that part of the library profession which deals with government research regarding just where the CRS is going under its new charter and, indeed, what it is doing now. These same questions are being asked by Congress.

After three years of experience with the Act, three conditions have been revealed: 1) the CRS is now required to offer a considerably broadened spectrum of services; 2) there is some difference of opinion in Congress over just what the CRS should do with its time and staff; and 3) there may be a wider division of authority among congressional bodies overseeing this one federal agency than any other unit in the federal government.

Thus the question is, what does Congress want from the CRS and how effectively is it getting it?

Information

Congress, first, simply wants information: who, what, when, where, how much, how many. It was to provide these that it created the Library of Congress in the first place, and the provision of information is a service that the Library does very well. The CRS recently conducted a detailed survey of congressional, senatorial, and committee staffs to test their satisfaction with 20 CRS products. The simple provision of information rated the highest in use by the members and staffs (89.8%) and highest in satisfaction with the material received.

The CRS provides information at many levels from many locations. It operates a professionally manned, while-

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you-wait Hot Line Telephone Service, librarian-staffed reference rooms in the House and Senate Office Buildings, and a Congressional Reading Room in the library itself. It has a librarian-staffed Congressional Reference Division tied to all the other outposts so the flow of queries coming in via phone, letter, and personal visits is keyed to response going out via computer network, phones, and messengers. The whole information complex involves 50 professionals handling 122,000 inquiries a year—a thousand a day at the height of the session. Together these congressional requests for pure information, unanalyzed or elaborated upon, involve 26% of the CRS work time and 16% of its professional staff. [For a fuller description of the information services, see Gwinn, Nancy E. / Information for Congress. *Special Libraries* 64 (no.2): 61–64 (Feb 1973).]

Briefing Assistance and Pro and Con Studies

The second product the Congress seems to expect from CRS is its pro and con briefing reports on national issues. Eighty-six percent of the surveyed offices said they used these and found the product to be satisfactory or better. The CRS prepares these with its subject analysts in its 300-man research divisions. The briefing reports give a short historical background of an issue, enumerate the current federal and local laws concerning it, provide a statement of the present problem, and describe the identifiable, alternative ways of solving it. The service does several thousand of these analyses each year and ten times that many copies of the resulting reports are used to answer further congressional requests. The provision of briefing and background studies involved 16,409 inquiries in 1973, which in turn took up 49% of total research time.

The CRS believes the briefing papers have the greatest impact on legislation of any single service it provides. There is strong congressional support for this product and for the appropriateness of the CRS providing it.

Data for Constituents

The third kind of request and the first kind of controversy, for there are differences of opinion among congressional users over whether or not the CRS staff and resources should be spent on "constituent inquiries." These requests tend to be of two types. The first are those cases where a hometown citizen writes his congressman about troubles he is having with "the government"—federal, in this case. Congress uses the CRS not to answer the complaint but to ask, "Where is the best place in Washington to get help for the writer?" or "What is the law on the matter explained in the attached letter from my constituent?" In these instances the CRS helps the member carry out his representative obligations—the ombudsman role.

The second form of constituent request is for information about a particular national issue. Usually the request is for a general background briefing or a pro and con—but the CRS cannot do research for constituents at all. With as many as 1,500 inquiries coming in per day, the service has had to set the following limitations to constituent work: 1) If documents, pamphlets, or CRS reports already stockpiled for member inquiries will answer the constituent's question, the service will be pleased to make them available to the member's staff (no constituents are answered directly). 2) If photocopies from clippings or reference books will provide the answer needed and the total effort can be done in minutes not hours, it will be done. 3) However, if neither of the above is possible, the service will try to tell the member the best source of the information for the constituent either in the writer's hometown, in Washington, or in the nation, in that order.

This second type of constituent request falls under the congressman's role of communicator—helping the citizen at home to understand better the complicated national issues under legislative consideration. The service answers constituent questions with junior personnel on a quick turnaround basis; in

1973, congressional offices sent the service 44,000 constituent inquiries, which absorbed 15% of its research time.

Policy Analysis

Political scientists, consumer groups, environmentalists, and congressional reform committees have pointed to the need for formal, professional analysis of legislation before it is passed. They point to examples of major programs which went awry and which, they believe, could have been either avoided or ameliorated had they been subjected to modern analytical techniques. They cite many of the early "poverty programs," duplication in education programs, the "instant ghettos" of public housing, self-defeating tax exemptions—a protracted list of federal plans which failed to work as expected. These students believe that if the Congress had its own think tank to provide it with the same detached policy analysis and environmental impact studies that the executive branch creates, the tension between the two opposing points of view would result in better legislation.

Such analytical support had been implicit in the Congressional Reorganization Act of 1946 but the reformers felt that there was need for greater emphasis, explicitly stated, on in-depth research. The Legislative Reorganization Act of 1970 therefore stipulated that CRS was assigned responsibility for providing policy analysis support to all congressional committees.

The service is now implementing the new law as quickly as possible, taking its new responsibilities seriously. Computer-based programs for issue tracking have been installed. Liaison officers are maintaining continuing contact with each committee to be certain that their staffs are using CRS staff and capabilities to their full potential. Lists of expiring federal programs and new problem areas of potential legislative interest are being brought to the attention of the appropriate committees. Almost all new employees are invested in the policy analysis effort. In short, the concept is broadening throughout all levels of the service in response to the new legislation.

Conflict in Eden

These, then, are the primary kinds of services the Congress has requested of the library and especially of the CRS. The majority would appear to be obvious, desirable, and presumably represent the consensus of Congress's will. But, except for basic reference work, no two congressional groups seem to agree on any service or any product.

Example I. The Congressional Reorganization Act of 1970 stresses the CRS's primary responsibility to congressional committees. Of the 64 lines in the Act defining services CRS must render, the first 42 relate solely to committee support. The justification for this primacy was simply that it is in the committees that the actual laws are written, choices made, programs challenged or developed. The CRS is above all oriented to legislative issues and the committee work is the pay-off.

"Truth" lies in precisely the opposite direction, says a substantial minority of individual senators and congressmen. They note that each committee has its own extensive, well-paid staff of experts. What Congress needs most from the CRS is support for individual congressmen who have small staffs without great subject expertise, but who are asked to debate and vote on these complicated issues and to initiate legislation for the good of their state or district without objective subject specialists to assist them.

Example II. The CRS is repeatedly told to emphasize legislative matters, staff with high level experts, and provide the Congress with outstanding professionals in all the major fields of public issues—yet one third of the requests actually sent to the service are for constituents.

Example III. Fundamentally, the Congress repeatedly praises the service for its objectivity and detachment. One of the most frequent points made with the greatest pride is that Congress can trust the service to transfer facts and information, while avoiding opinion, conclusions, and recommendations. The researcher's personal point of view is never

allowed to intrude. But the most frequent criticism made of the service by the members is, "You can never get the kind of answer you really *need* out of the CRS! They hire all those expensive experts, but when you ask them how you should vote or what would be the best solution, they always give you on-the-one-hand and then on-the-other-hand."

Example IV. The rhetoric of policy analysis points with pride to the efficacy of research to give the widest span of choices and the greatest depth of analysis on cost, impact, social results, resource trade-offs. But a substantial number of thinking members believe this is unreal. They believe that all that people located in a library and dependent on what someone else has happened to get printed on paper can do is locate and send data. What is supposed to be provided by "research" can really be found only in the field. In short, they challenge the whole idea of policy analysis as an outgrowth of campus activity ("doing a paper on"), which is essentially meaningless in the harsh world of politics. They believe the CRS and the library should perfect their information handling techniques and avoid the costly distraction of professional "report writers."

Who Speaks for Congress?

Two thoughts occur to the observer: First, who has the authority to decide on priorities and purpose? And second, the CRS is only 600 out of 4,000 LC employees. How does the rest of the institution relate to the Congress?

There are many areas of library activity which require congressional approval. Funding to continue library programs is one of these. In this case Congress is not asking LC for assistance; it is the library that is the supplicant. Thus LC/Congress relations differ from the usual Executive agency/Congress dialogue. Each is requesting support from the other. Who does what for whom . . . under whose instructions . . . by whose approval . . . with what funds, brings us to the library's congressional oversight committees. What the CRS is to be and what it is to do lies in their hands.

The Appropriations Committees. There are two of these—one in the House and one in the Senate. It is they, of course, who control the purse strings. They simply provide money to staff an activity or they do not. From this, tradition, protocol, and simple common sense provide the signals from which the librarian takes his instructions.

There are some unusual elements in the funding process. To begin with, unlike the typical obstacle course an executive program agency must run, there is no annual "authorization committee" to convince. When HUD wants to float a new housing program, it must first sell it to the House Banking and Currency Committee and then to the Senate Banking, Housing, and Urban Affairs Committee. Once these approve and agree on the purpose, magnitude, and necessary funding, the idea must be presented and defended all over again before the two Appropriations Committees.

This is not so with the library. The librarian starts directly with the House Appropriations' "Subcommittee on the Legislative Branch" and after enumerating his on-going services and requesting continuation of enough money to sustain them at a viable level, he presents whatever new services or expanded programs he desires and requests the committee's approval by appropriate funding. He repeats the procedure before the equivalent committee in the Senate, and the representatives from the two committees meet in executive session to decide how much of his program to buy. Their decision is announced some two or three months after the hearings, the two houses vote the money with little demur, and that ends the process for the year.

The House subcommittee is composed of nine members and the Senate subcommittee has five. There is no telling from year to year which will turn out to be sympathetic and which critical.

The Joint Committee on the Library. The Joint Committee has long been the library's friend at court. With only an

occasional exception, its chairman has taken great pride in the library's activities and collections, and has been a frequent visitor to its public events. The relationship of the Joint Commitee and the Appropriations Committees is somewhat analogous to the governing bodies traditionally concerned with a public or university library. The Joint Committee is much like a library board or "The Library Committee" which assists a librarian with his problems and confers with him about how and where he invests the library's resources. The Appropriations Committees tend to mirror the mayor or the college president. Eager as they may be to support and expand, they must divide their resources among many competing customers and they play the negative part.

The Joint Committee was established in 1800 at the same time and with the same legislation as the library itself. Through the years it has conveyed to the librarians the needs of Congress, and it has urged adequate and enlarged support from its fellow members.

The Joint Committee is composed of ten members all of whom are drawn from the two legislative supervisory committees: the Committee on House Administration and the Senate Committee on Rules and Administration. The fact that there are three separate and independent committees but with one made from parts of the other two has an interesting result. While the Joint Committee on the Library is the parent oversight committee, if there is disagreement between the representatives of the two houses within the Joint Committee, its members can "go home" and with full authority instruct the library in the role of the *Administration* Committee membership. Any one of the three groups has the authority to send directives to the library or even hold critical hearings or investigations as an independent administrative body.

There are a number of anomalies built into the Joint Committee's relationship to the library. The Joint Committee has no authority to consider or report legislation which affects the library, it has no relationship to the money that is appropriated for it, the librarian is appointed by the president, and his confirmation is recommended by the Senate Committee on Rules and Administration alone.

The Administrative Committees. Most legislation relating to the library (other than appropriations) is sent, not to the Joint Committee on the Library nor to the appropriations committees, but to the Committee on House Administration and the Senate Committee on Rules and Administration. Thus these bodies are in the strongest position to modify the long term purpose of the library by changing the library's statutory charter. In addition, on the House side, the all-powerful Rules Committee has had a particular interest in congressional reform and thus it was the one which handled the detailed development of the Legislative Reorganization Act that had a great impact on the Congressional Research Service.

The Joint Committee on Congressional Operations. This, the newest oversight body, was created as a part of the Legislative Reorganization Act of 1970 specifically to watch over the implementation of the new act and to make continuing recommendations for improving congressional procedures. Its interest in the library falls almost exclusively on the Congressional Research Service and at the time of this writing is planning to hold its first hearings on the CRS to discuss present and future plans for development of the act's intent.

Other Congressional Committees. In addition to those mentioned, there are many congressional committees which are concerned with various specific activities carried on by the library itself. Thus in a typical year the librarian may testify before such committees as the two Judiciaries (copyright matters), Foreign Relations (UNESCO, ratification of treaties on the exchange of books and documents), Ways and Means (tax deductions for charitable contributions to libraries), Agriculture (foreign book funds obtained under the P.L. 480 program of agricultural exchange), Public

Works (expansion of the library plant), Post Office and Civil Service (LC staff "supergrades" and postage rates for materials to the blind and physically handicapped), Science and Astronautics (LC support for technology assessment), and more.

Who decides what the library will do? Who resolves differences between conflicting aims? All of these, individually and in concert. The resulting problem is self-evident.

Conclusion

Given these cross-currents of purpose and supervision, can we guess what the future holds for the Congress–CRS relation? Probably something of the following. Congress relies heavily on the CRS for information. It has been willing to support it with substantial funds and staff. Part of its membership believes it to be the appropriate agency for giving the Congress informational parity with the executive branch, while other parts question this appropriateness or feel no real need for such a service. Inasmuch as the oversight power is distributed among a number of units, each of which views the library's role in a slightly different manner, the future of the institution's relationship can be expected to develop in a wavering course but probably resulting in a constantly strengthened and broadened interdependence for there is no portion of the Congress opposed to Congress's library as an institution.

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The Subject Reference Librarian and the Academic Departments: A Cooperative Venture

Garold L. Cole

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■ Some methods by which the academic library can survive the financial crisis of the seventies and continue to improve its service to the academic community are discussed. The suggested techniques require implementation by a subject reference librarian who would be alert and responsive to all facets of the library's contact with the teaching departments. An integral part of this program requires the close cooperation between the librarian and the teaching faculty to insure that the university's educational objectives are being furthered.

ALTHOUGH the recent jolts to the American economy have been felt by higher education and the entire academic community, no single campus institution has been harmed more than has the university library *(1)*. The eroding effect of inflation on inert or reduced budgets has severely hampered the ability of libraries to maintain a desired level of service *(2)*. At the same time the cost of operation has risen drastically for, in addition to its continuing support of the university's traditional course offerings, the library has also been asked to provide materials for a variety of new area studies. In order to cope with these disquieting developments, many libraries are attempting to be more provident with the finances they do possess by intensifying their vigilance toward expenditures. For instance, in its acquisitions policies, journal and other standing-order subscriptions are being reviewed to see that the original motivation for their purchase still exists; reprint catalogs are being scrutinized to see if the items really do have potential value, rather than just having been listed in a significant bibliography; and, the effectiveness of present book jobbers is being compared with others to insure that the library is receiving the most economic and efficient service possible.

At the same time there has been a renewed effort to glean maximum usefulness from existing resources *(3)*. The suggestions included in this paper represent just a few of the ways the subject reference librarian may collaborate with "his" department to make certain that all available resources, human and bibliographic, are explored. Because of his location within the library system the subject librarian can attempt to insure that the library's belt-tightening procedures do not harm his assigned department in vital areas. He also may be able to assist the faculty and students in be-

coming familiar with library programs designed to enhance their teaching and learning potential.

Aside from furthering the university's instructional functions, a good relationship between the subject librarians and the academic departments can be mutually beneficial. For instance, the teaching faculty often has insufficient information about the library and thus cannot give their students detailed advice on library use. Despite an advanced degree, they sometimes lack knowledge of library resources in subject areas beyond their own specialties. A subject librarian can be of great value in adding to the teacher's professional repertoire, since he possesses a broad knowledge of his area, preferably gained through graduate course work; attendance at some professional association meetings; and a constant review of the literature; familiarity with research materials and techniques, as well as the important bibliographic tools; and a thorough knowledge of the book trade and library practices. By the same token, many librarians must admit to an intellectual emptiness that may be encountered if they become enmeshed in the routine, perfunctory aspects of their profession *(4)*. This emptiness can be closed by a closer, day-to-day working relationship with subject disciplines.

The Place of the Library in the University

If each department is aware of the other's aims and goals as well as its problems, this association is likely to be more profitable. Despite the active suspicion many librarians harbor that other faculty members are not really interested in the library, except during a time of need, the subject librarian should take the initiative to insure that this reciprocal knowledge exists. Presumably he already knows whether the university is primarily a teacher-training institution or a multi-purpose liberal arts school. But is this direction likely to change? If so, what impact will these changes have on his department? Will the library need to be strengthened to support a prospective advanced degree? What is the scope of the courses presently offered and what new ones are projected for the future? Does his academic department participate in cross-disciplinary studies with other departments on campus?

Answers may come from such varied sources as the minutes of departmental staff or curriculum committee meetings, attendance at university convocations, or during social situations. At these same meetings the subject librarian can seize the opportunity to inform his department of library developments. In addition, informal newsletters can be extremely useful for notification of significant purchases, information on how the academic department can expect to fare in a prospective new building, or any aspects of the library's progress that may have relevance for that department. Even though newsletters may be negatively received as simply more in the seemingly endless deluge of academic paperwork, their continued appearance may, at least subliminally, inform the teaching faculty that old "what's his name" is the library person to see should he have the need.

Public Relations Efforts

The frequency with which the teaching faculty actually does seek the librarian's aid may be directly related to how sincere he perceives the subject librarian's offers of aid. There are several approaches to proving this sincerity. For instance, the subject librarian should visit as many classrooms as time permits and invite the students to let him give assistance in bridging the gap between an assignment and its completion. For undergraduate students, this assistance might provide a "how-to-use-the-library" tour. For graduate students, a detailed lecture on the availability and use of resource tools may be useful. For the instructor, the subject librarian may be able to construct a bibliography of useful items for the course; or perhaps he can insure that books needed for the course are purchased by the library and processed as rapidly as possible.

Building the library's book collection may be the most tangible method by which the subject librarian can demonstrate his sincerity. Often simply informing the academic department of the combination of methods by which the library obtains its books is a useful step; it does much to alleviate both unnecessary concern by the instructor and duplication of efforts. Thus, if the instructor can ascertain how well his field is being covered by routine acquisition methods—approval plans from book jobbers, standing orders, etc.—he and the librarian can devote their book-buying efforts to such often neglected areas as out-of-print catalogs, foreign language books, and state and local items. Sometimes it is necessary to evaluate the library's holdings by comparing the titles in the library's collections with those listed in the acknowledged bibliographies. An evaluation of this size may involve more time and effort than either the library or the academic department could undertake alone. But if each is able to contribute some help in the form of student assistance and if the evaluation is placed under the subject librarian's supervision, it is more likely to be completed. If the evaluation does reveal significant gaps, the subject librarian should make certain that the library undertakes a program to acquire the important missing titles.

Another way the two departments can work together is in building supportive library resources for projected new courses to insure that the books are available for the students when the course is initiated. If the library's budget is insufficient to support the purchase of the needed materials for these new courses, as has often been the case with such new area study programs as Black Culture, Women's and Mexican-American History, the librarian can prove invaluable in estimating the amount needed and in seeking federal or other external sources of funding.

Frequently, cooperation through a book committee may be the most efficient way to handle expensive resource material purchases. Some simple, flexible guidelines administered by interested and reasonable people should prove adequate in governing the proceedings. For instance, the academic department should agree to request only those items which have the greatest likelihood of being used and then set priorities as to the immediacy of their need. When presented with this set of requests, the library should agree to purchase as many items as its budget will allow without applying unnecessary value judgments. However, the subject librarian may suggest alternatives to some expensive, infrequently used items. He may discover and/or remind the instructor of the caches of research materials that already exist locally in universities, historical societies, federal record centers, or organizations operated by joint university cooperation such as the Center for Research Libraries.

As is apparent through the establishment of cooperative buying centers and the development of interlibrary loan procedures, the definition of the term "library" has changed from its traditional meaning of a building filled with books to one that stresses its role as a functional tool to be used as a means for gaining access to needed materials wherever they may be physically located. With this concept in mind, and depending upon the cost and the expected frequency of use, it is often a wiser decision to borrow the material through interlibrary loan. The instructor must accept this new definition of the library, both in theory and especially where it has meaning in his area of concentration. He also must accept the obvious bargain that resource collections reproduced in microform represents.

The Future

If the academic library of the early 1970s is feeling the pinch now, the situation seems certain to become even darker. Just as stagnant book budgets will continue to suffer the atrophy of inflation, they will also continue to be "assailed" by new academic programs which demand books that the library

had previously not needed; by traditional courses as they become more sophisticated through the use of innovational teaching techniques; through the publication of valuable research materials to which faculty had previously not had such free access; and, due to the alarming increase of theft and mutilation, by the replacement of materials the library already owns. Because of these factors all materials selected for purchase must have some fairly high degree of expected use either immediately or in the future. If materials are selected for purchase on the basis of these criteria, and if the faculty is willing to accept the new concept of the library as a tool to locate and borrow materials from other libraries, and if the subject librarians and the academic departments can cooperate in ways similar to those suggested in this paper, the future may not prove to be as bleak for the university library as it now appears.

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Documentation in the Literature of Tropical and Subtropical Agriculture

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■ The source coverage of the serial literature of tropical and subtropical agriculture was studied by a survey of 51 cooperating libraries located at land-grant universities and the National Agricultural Library. The six-month study showed wide ranges in the coverage of the serial literature in the subject field among the cooperating libraries. A compilation of libraries in rank order in relation to collection strength in tropical and subtropical agriculture was given. The results of the study present a strong case in favor of division of subject fields among libraries within regional areas in the United States.

THIS SURVEY studied the degree of source coverage and bibliographic access which selected land-grant university libraries in the United States have in the subject field of tropical and subtropical agricultural literature. The author selected one land-grant university library from each state which has a college of agriculture as a part of its academic or administrative structure. The Commonwealth of Puerto Rico and the National Agricultural Library were also included in the survey which was completed in the first half of 1973. The intent was to provide information which will assist in a national effort to coordinate collection building and in the establishment of regional centers in agricultural subject areas. Presumably such efforts will be coordinated and supported by the National Agricultural Library.

The literature of tropical and subtropical agriculture was the subject surveyed; therefore, a basic definition of what constitutes this type of agriculture is desirable. Agriculture is greatly influenced by climate, topography, weather, proximity to bodies of water, and other modifying factors. Setting latitudinal limits north and south of the equator for tropical and subtropical agriculture is inadequate, because many localized climatic modifications allow plants of the temperate zone to flourish in equatorial areas. However, for simplicity, tropical and subtropical agriculture are here defined as agriculture which is always found in tropical and subtropical latitudes (0 to 30 degrees north and south of the equator) but never in temperate latitudes.

The first study on documentation of tropical and subtropical agriculture was

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by Cave *(1)*. He used the citation counting method and covered a two-year period, 1960–1961. The list which Cave compiled included 124 serial titles thought necessary for a library if it attempted to have thorough coverage of the serial literature in the field. Nakamura *(2)* studied agricultural literature using the methods of Cave and found that, according to Bradford's Law of Bibliographic Scattering *(3)*, eleven key journals would yield 50% of the currently published information in agriculture. Both Cave and Nakamura used the method of collecting citations at the end of articles in a certain number of selected source journals and analyzing the citations according to the journals in which the references were published.

The citation method of ranking journals was first reported in the literature by Gross and Gross *(4)* in their study of chemical education in 1927, and the method has since been applied to a number of other subject fields in the physical and biological sciences *(5–7)*. This method of studying the characteristics of the periodical literature of a field is poor because much of what is read is not cited and much of what is published may not be cited. Furthermore, there is evidence of considerable self-citing among the source journals which are chosen; the results then are dependent on which journals are selected for the study. Lawani *(8)* has shown that self-citing was greater than 80% in each of the source journals which Cave used in his study of tropical agricultural literature. Extensive self-citing probably accounts for the surprising results in Nakamura's study *(2)*. Bradford's Law may be applied to any given set of data; but if the data were erroneously derived, the results will accordingly be invalid. In three separate studies of the usage of petroleum literature using the citation counting method, Cole *(9)* found by a comparison of reference-scattering coefficients derived from the data that such results were largely unreliable.

A second method used to study the periodical literature of a subject field is the analysis of entries listed in an appropriate abstracting or indexing service. This method should be the most comprehensive and least-biased of the two methods of studying the use and characteristics of the literature in a particular field *(8)*. However, Martyn *(10)* found that only 79% of the published papers are indexed in the appropriate indexing services in the broad field of science and technology. Those papers which were missed gave no evidence of being of lesser quality or value. Editorial bias as it relates to the choice of journals to be indexed in an abstracting or indexing service apparently plays a role here. In spite of this apparent bias, it would appear that the second method of analyzing the characteristics of the literature in a particular field would be more representative of the total literature than those figures based on the citation counting method of Cave and Nakamura. This paper, based on data obtained from Lawani's *(8, 11)* study of the literature of tropical and subtropical agriculture, used the second method described. The 50 periodical titles listed in Table 1 in rank order are those titles which, according to Lawani, provide approximately 50% source coverage of the serial literature in tropical and subtropical agriculture. These data, derived over a four-year period, covered 8609 entries appearing in 681 periodicals *(8)*. A library, then, which desired to have complete coverage of the literature of tropical and subtropical agriculture would have to receive 681 appropriate periodical titles *(8)*. This figure is in contrast to the 124 serial titles which Cave thought would provide thorough coverage in 1961 *(1)*.

Method

A letter of inquiry was sent to the serial section of the libraries of the 52 cooperating institutions. Included with the letter was a list of the 50 serial titles listed in rank order which would, if received by the library, provide a minimum of 49.83% coverage of the serial literature in tropical and subtropical agriculture. Each library was asked to check those titles which the library cur-

Table 1. Periodical Titles Listed in Rank Order of Being Most Frequently Cited in the Literature of Tropical and Subtropical Agriculture

Rank	Number of Articles	Percent Coverage	Periodical Title
1	223	2.59	Indian Journal of Agricultural Science
2	193	2.24	Indian Farming
3	187	2.17	Oleagineux
4	156	1.81	Journal of Economic Entomology
5	134	1.56	L'Agronomie Tropicale
6	133	1.54	Farming in South Africa
7	131	1.52	World Crops
8	130	1.51	East African Agriculture & Forestry Journal
9	120	1.39	Experimental Agriculture
10	113	1.31	PANS. Pest Articles & News Summaries
11	101	1.17	Turrialba. Revista Interamericana de Ciencias Agricolas (Costa Rica)
12	100	1.16	Planters' Bulletin (Malaya)
13	94	1.09	Australian Journal of Experimental Agriculture & Animal Husbandry
14	93	1.08	Tropical Agriculture
15	92	1.07	Bragantia
16	92	1.07	Fruits. Fruits d'Outre-mer, Culture, Industrie, Economie
17	88	1.02	Kenya Coffee
18	87	1.01	Queensland Agricultural Journal
19	78	.91	Agronomia Tropical (Venezuela)
20	77	.89	Queensland Journal of Agriculture and Animal Sciences
21	76	.88	Journal of Agriculture of the University of Puerto Rico
22	73	.85	Agricultural Gazette of New South Wales
23	73	.85	Agricultural Research Review (Cairo)
24	72	.84	Cotton Growing Review
25	72	.84	Indian Journal of Agricultural Economics
26	72	.84	Two and a Bud
27	69	.80	Biologico (Sao Paulo, Brazil)
28	69	.80	Philippine Agriculturist
29	68	.79	Foreign Agriculture
30	68	.79	Plant and Soil
31	68	.79	Sugar Journal
32	66	.77	Rhodesia Agricultural Journal
33	65	.75	Rice Journal
34	64	.74	Coton et Fibres Tropicales
35	64	.74	Riso. Rivista Mensile di Economia e Tecnia Risiera (Milan)
36	64	.74	Sugar y Azucar
37	61	.71	Malaya. Rubber Research Institute Journal
38	58	.67	FAO Plant Protection Bulletin
39	58	.67	International Rice Commission Newsletter
40	57	.66	Cafe Cacao, The
41	57	.66	Allahabad Farmer
42	57	.66	Zeitschrift fuer Auslandische Landwirtsch
43	54	.63	Agriculture Pakistan (Karachi)
44	54	.63	Jarq. Japan Agricultural Research Quarterly
45	54	.63	Tea Quarterly (Ceylon)
46	53	.61	Agricultural Situation in India
47	52	.60	Current Science (India)
48	52	.60	Israel Journal of Agricultural Research
49	51	.59	Cahiers d'Agriculture Pratique des Pays Chauds
50	51	.59	Philippine Journal of Plant Industry

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rently received. In addition, they were asked to indicate whether they had a current subscription to *Tropical Abstracts*, the only abstracting service which specifically indexes the literature of tropical and subtropical agriculture. A survey beyond rank 50 was not performed because bibliographic scattering increased rapidly after that point. At this point it is emphasized that the percent-coverage figures given throughout this paper are figures based on titles ranked 1–50. Since some of the libraries surveyed may have titles of rank beyond 50, it is reasonable to assume that in some instances the percent-coverage figures for the serial lit-

Table 2. Geographic Regions Used in the Study of the Literature of Tropical and Subtropical Agriculture

Northeast	South-Atlantic	South
1. Connecticut	1. Delaware	1. Alabama
2. Maine	2. Florida	2. Arkansas
3. Massachusetts	3. Georgia	3. Kentucky
4. New Hampshire	4. Maryland	4. Louisiana
5. New Jersey	5. North Carolina	5. Mississippi
6. New York	6. Puerto Rico	6. Tennessee
7. Pennsylvania	7. South Carolina	7. Texas
8. Rhode Island	8. Virginia	8. West Virginia
9. Vermont		
Midwest	**Northwest**	**Southwest**
1. Illinois	1. Alaska	1. Arizona
2. Indiana	2. Idaho	2. California
3. Iowa	3. Montana	3. Colorado
4. Kansas	4. North Dakota	4. Hawaii
5. Michigan	5. Oregon	5. Nevada
6. Minnesota	6. South Dakota	6. New Mexico
7. Missouri	7. Washington	7. Utah
8. Nebraska	8. Wyoming	
9. Oklahoma	**Washington, D.C. Area**	
10. Ohio		
11. Wisconsin	National Agricultural Library	

erature of tropical and subtropical agriculture may be higher for a given institution than is indicated by the data.

Replies were arbitrarily classed into geographic regions shown in Table 2, with the National Agricultural Library standing alone. A bar graph using composite data for each geographic region was constructed using the data received from the cooperating libraries within each region and calculated on the basis of the data shown in Table 1. The data illustrated in Figure 2 show the coverage for each geographic region.

Table 4 is a rank order list of cooperating institutions with percentage of source coverage given. The percentage figures are based exclusively on the 50 top ranked serials included in the survey with 49.83% representing complete coverage of the first 50 source journals.

Discussion

The percent coverage of the literature that each periodical represents (shown in Table 1) was calculated from data appearing in Lawani's study *(8)* of the entries appearing in *Tropical Abstracts* over a four-year period, 1967–1970. The periodical titles are, therefore, ranked according to the frequency with which they are cited. In his study Lawani had analyzed a total of 8,609 entries; it is this number which is used as the basis for the percent-coverage figures calculated for each periodical title shown in Table 1. Totaling the percent figures for rank 1 through 50 yields 49.83%, a slight deviation from Lawani's figure of 49.87% given in Table 3, which is probably due to rounding errors.

The line graph in Figure 1, constructed from data in Table 3, illustrates

Figure 1. Percentage and Number of All Papers as a Function of Cumulative Number of Titles in Rank Order

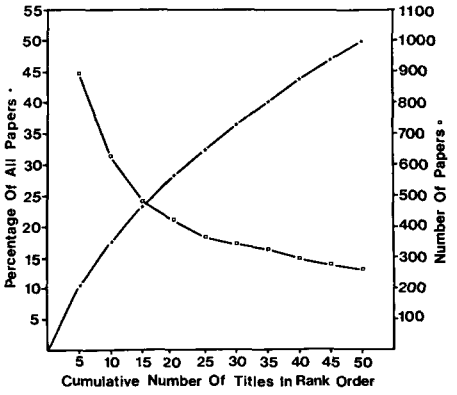


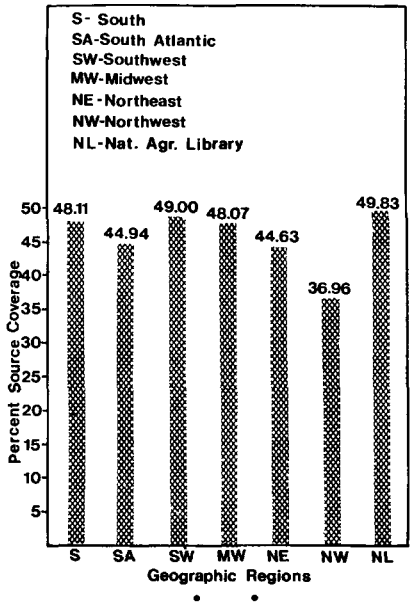
Table 3. Data for Percentage and Number of All Papers as a Function of Cumulative Number of Titles in Rank Order as Shown in Figure 1

Number of Titles in Rank Order	Number of Papers	Cumulative Total of Papers	Percentage of All Papers
1–5	893	893	10.37
6–10	627	1520	17.65
11–15	480	2000	23.23
16–20	422	2422	28.13
21–25	366	2788	32.38
26–30	346	3134	36.40
31–35	327	3461	40.20
36–40	298	3759	43.66
41–45	276	4035	46.86
46–50	259	4294	49.87

a near straight line progression of bibliographic scattering that occurs in the literature of tropical and subtropical agriculture. This graph indicates that 50 appropriate journal titles are required to provide 49.83% coverage of the source journals in the field. After rank 50, reference scattering becomes even more pronounced. In order to assure 75% coverage of the field 120 appropriate periodical titles would be required, 230 titles for 90% coverage and 681 titles for complete coverage *(8)*. Figure 1 also clearly illustrates the rapid drop in number of papers appearing per journal title in decreasing rank order. The number of papers per title remains relatively high for the first ranked 25 journal titles and then decreases slowly to rank 50 and thereafter approaches one at rank 681. Papers included in the lower ranked 451 journal titles are obviously examples of bibliographic isolates appearing in journals which are not devoted to tropical studies but may have some interest in peripherally related topics.

Figure 2 illustrates the percent source coverage of tropical and subtropical agricultural literature by institutional libraries arranged by geographic region. The percentage figures for these data were derived from figures given in Lawani's study *(8)* but calculated from data given in Table 1. The important feature of this set of data indicates that with the exception of the Northwest the various geographic regions described in the study have approximately the same composite percent source coverage of the serial literature in tropical and subtropical

Figure 2. Percent Source Coverage of the Serial Literature of Tropical and Subtropical Agriculture by Geographic Region



agriculture. The National Agricultural Library was the only institution in the survey to show complete coverage of the first ranked 50 journals which represents 49.83% of the total serial literature in the field. While five of the six regions showed percent coverage figures which were close to those figures of the National Agricultural Library, there was nevertheless, a wide variance in coverage within each region among the institutions surveyed. For example, in the Northeast, Cornell University had 43.72% source coverage of the literature while the University of Maine had 5.06% source coverage.

Table 4. Rank Order List of Cooperating Institutions According to Percent Source Coverage of the Periodical Literature of Tropical and Subtropical Agriculture

Rank	Institution	Percent Source Coverage	Subscription to Tropical Abstracts
1	National Agricultural Library (Beltsville, Maryland)	49.83	yes
2	University of California (Berkeley)	48.99	yes
3	Cornell University	43.72	yes
4	University of Illinois (Urbana–Champaign)	41.15	yes
5	North Carolina State University (Raleigh)	38.21	yes
6	Texas A&M University	38.19	yes
7	University of Florida	36.82	yes
8	University of Minnesota	36.76	yes
9	Iowa State University	36.14	yes
10	Oregon State University	35.25	no
11	Michigan State University	33.86	yes
12	Ohio State University	33.80	yes
13	University of Tennessee (Knoxville)	32.90	yes
14	University of Nebraska	32.88	no
15	Louisiana State University (Baton Rouge)	31.82	yes
16	University of Hawaii	31.52	yes
17	University of Kentucky	31.28	yes
18	University of Arizona	30.39	no
19	University of Georgia (Athens)	30.09	yes
20	Colorado State University	29.52	yes
21	University of Wisconsin (Madison)	29.10	yes
22	University of Missouri (Columbia)	28.06	yes
23	University of Puerto Rico	27.14	yes
24	Washington State University (Pullman)	26.62	no
25	Purdue University	26.47	no
26	Kansas State University	25.54	yes
27	Clemson University	24.47	no
28	Utah State University	23.85	yes
29	University of Wyoming	23.29	no
30	West Virginia University	23.45	yes
31	Pennsylvania State University	23.24	no
32	Oklahoma State University	21.95	yes
33	Rutgers University	21.82	no
34	Mississippi State University	21.05	yes
35	Auburn University	19.60	no
36	New Mexico State University	19.44	no
37	University of Massachusetts	19.13	yes
38	University of Arkansas	18.90	no
39	Virginia Polytechnic Institute	18.24	no
40	South Dakota State University (Brookings)	17.97	no
41	Montana State University (Bozeman)	17.06	no
42	University of Idaho	16.83	no
43	North Dakota State University (Fargo)	15.96	no
44	University of New Hampshire	15.57	yes
45	University of Delaware	15.37	yes
46	University of Maryland (College Park)	14.50	yes
47	University of Vermont	12.03	no
48	University of Connecticut	10.44	no
49	University of Nevada	8.02	no
50	University of Rhode Island	6.26	no
51	University of Maine	5.06	no
52	University of Alaska	3.26	no

Almost every region showed such extremes in coverage, although institutions surveyed in the Northwest were uniformly low in their coverage with the single exception of the library of Oregon State University which showed a strong 35.25% coverage of the literature, but then surprisingly lacked comprehensive direct access to the literature by means of *Tropical Abstracts*. In addition to having weak source coverage of the serial literature in tropical and subtropical agriculture none of the libraries in the Northwest region had a subscription to *Tropical Abstracts* and accordingly lacked direct access to the literature in the field.

The Midwest, on the other hand, had libraries which were uniformly high in their coverage of the literature, with the University of Illinois at Urbana-Champaign showing a high of 41.15% source coverage and Oklahoma State University having a low of 21.95% source coverage for the region. In the South-Atlantic states North Carolina State University reached 38.21% coverage as a high for the region and the University of Maryland as a low with 14.50%.

In the Southwest, the University of California (Berkeley) Library had the highest source coverage in the region and the highest of all the libraries surveyed with the single exception of the National Agricultural Library. The range of percent coverage in the region was from 48.99% for the University of California (Berkeley) to 8.02% for the University of Nevada. The South showed Texas A&M University as the strongest library for coverage of tropical and subtropical agricultural literature in that region with 38.19% and the University of Arkansas lowest with 18.90%.

Table 4 is a list of cooperating institutions arranged in rank order according to the percentage of source coverage of the literature of tropical and subtropical agriculture. The data here are revealing because they show the wide range and degree of source coverage of the literature which the various libraries of the cooperating institutions displayed. Coverage of the literature (excluding the National Agricultural Library) ranged from almost complete coverage of the top ranked 50 journals (University of California, Berkeley at 48.99%) to very incomplete coverage (University of Alaska with 3.26%).

Relationship Between Holdings and Programs

There is likely a relationship between the size of the holdings which a library has in the literature of tropical and subtropical agriculture and the existence (or otherwise) of international programs in tropical studies at the university. For example, the University of California (Berkeley) ranked second to the National Agricultural Library in its holdings of tropical and subtropical agricultural literature. The programs at Berkeley show the presence of an Institute for Tropical Biogeography in which graduate students may do field work in the tropics. In addition Berkeley offers exceptionally strong graduate programs in entomology, plant pathology, and nutritional studies, all of which require extensive holdings in the serial literature of tropical and subtropical agriculture. Cornell University has an outstanding Center for International Studies with the International Agricultural Development Program representing an important aspect of the center. The International Agricultural Development Program is devoted almost exclusively to the study of tropical agriculture. Cornell's library ranked third in the list of libraries in this study. The University of Illinois Library (all campuses) ranked third *(12)* in total holdings among academic libraries in the United States in 1970. The University has strong programs in entomology and all areas of agriculture and the library has a distinguished collection in a large number of subject fields including the serial literature of tropical and subtropical agriculture. The University of Illinois Library ranked fourth in this study.

Influence of Location on Holdings

The geographic location of the university likely plays a part in determining

acquisition policy for the library. It is not surprising that the University of Alaska Library and the University of Maine Library have small serial holdings in the literature of tropical and subtropical studies. States such as Florida and California, however, which have subtropical climates within their borders would be more likely to have university programs with interests in tropical studies.

Proximity to current large collections in the serial literature of tropical and subtropical agriculture would be a valid reason for a library to place such acquisition on a low priority. This fact has undoubtedly had some effect on policy decisions in acquisitions in the libraries of the University of Maryland, University of Delaware, Virginia Polytechnic Institute, Rutgers, and Pennsylvania State University.

Coverage Rank

Institutions ranked 1 through 10 may be considered to have outstanding coverage of the current serial literature in tropical and subtropical agriculture. Institutions ranked 11 through 25 are grouped within a few percentage points of each other and have collections which appear to be approximately the same in scope; such collections appear to be strong but not outstanding. Libraries ranked 26 through 34 have collections which are probably adequate for undergraduate programs in the agricultural sciences and limited work on the graduate level but likely not suitable to support doctoral research in agriculture which is in any way related to tropical studies. Institutions which rank 35 through 52 have collections in the serial literature of tropical and subtropical agriculture which are likely inadequate in strength to meet the needs of undergraduates or graduates with even a peripheral interest in tropical studies in the agricultural sciences.

An important aspect in collection building revealed by this study is the reaffirmation of the principle that collection duplication among libraries within regional areas is a costly and wasteful expenditure of money and manpower. Such expenditures yield diminishing returns in terms of meeting the needs of all the scholars in all the disciplines at any given university. Libraries in a region should reach some division of fields and each institution should build on its own strength rather than diffuse its efforts attempting to cover all areas equally. This is not to say that weak areas should be entirely neglected, but they should be relegated to a secondary position in acquisition priorities. Rapid interlibrary loan within regional areas should serve the needs of the university community where it finds weak areas in the library collection.

The National Agricultural Library as part of its efforts to implement the nationwide Agriculture Library Network (ALN) is actively interested in establishing the principle of strong subject collections in a few areas rather than many weak collections in many subject areas in agriculture libraries at land-grant universities. Furthermore, it is the desire of the National Agricultural Library to make known such subject strengths to the various land-grant university libraries so that a more efficient flow of interlibrary loans and other modes of interlibrary cooperation may be facilitated. This study indicates that each of the six regions discussed currently has one or more institutions with a strong collection in the serial literature of tropical and subtropical agriculture. It would appear to be appropriate for libraries to rely on the existing strong collections in their region for future needs rather than attempt to "bring up to standard" their own collection in this subject field.

Summary

The serial literature of tropical and subtropical agriculture shows a high degree of bibliographic scattering. Relatively few land-grant university libraries have outstanding collections in the subject field. The study further indicates each of the geographic regions in the survey has at least one library with a strong

collection in the serial literature of tropical and subtropical agriculture. In order to prevent unnecessary proliferation and duplication of collections in agriculture there is a clear need for a national coordination of effort in collection building in the agricultural sciences among the libraries of land-grant universities. Since the National Agricultural Library is the national resource library in respect to agriculture it is reasonable to suggest that the National Agricultural Library act as the coordinating body to support future studies which would enhance and promote an efficiently planned growth of collections in agriculture at the various land-grant university libraries in the United States.

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How Do Scientists Meet Their Information Needs?

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■ A survey of the information use patterns and communication practices of academic physicists in the greater Boston area reveals that academic physicists rely heavily on formal and informal sources of information. Their use of formal publications concentrates on a small number of journal titles. Time and location factors play an important role in their information seeking and gathering. A considerable number of the physicists surveyed do not seek librarians' help when searching for information in the library. Although libraries have been considered largely as storehouses of materials and librarians organizers of these materials, more active roles for librarians are possible.

THE SCIENCE LIBRARY is an agency of scientific communication. If it is to succeed in its mission, librarians must devote themselves increasingly to a fuller definition of crucial problem areas and to a more precise identification of scientists' information requirements. A library is effective only if it can maximize satisfaction of user needs and minimize time loss to the user *(1)*. How can librarians maximize satisfaction of scientists' information needs? To answer this, one should first address himself to a more fundamental question, that is, "How do scientists meet their information needs?"

A student-faculty research effort was conducted in a class on the "Literature of Science & Technology" in Spring 1973 at the School of Library Science, Simmons College. A composite questionnaire was carefully formulated and ad-

Table 1. Percentage of Questionnaires Returned (Physicists)

Institution	No. Sent	No. Returned	% of Return
BU	21	10	47.6
Brandeis	20	17	85.0
Brown	49	17	34.7
Harvard*	86	54	62.8
MIT	120	55	45.8
NE	43	26	60.5
Total	339	179	52.8

* Includes faculty of the Division of Applied Physics & Engineering

Table 2. Sources of Information

Sources	BU	Brandeis	Brown	Harvard*	MIT	NE
Formal Publications	4.5	4.4	4.4	3.7	3.9	4.2
Semi-Formal Publications	3.2	3.0	3.3	2.7	3.4	3.6
Reference Materials	1.6	0.5	1.1	1.4	1.5	1.7
Meeting & Conferences	3.0	1.5	2.6	2.3	2.8	2.5
	> 36%	> 38%	> 38%	> 40%	> 40%	> 35%
Informal Communication	2.2	3.3	2.8	2.9	3.1	2.6

Weight points were obtained by dividing the total points of each category by the total number of returns from that institution (physicists).

* Statistics represent the combined results of all chemists and physicists from Harvard.

ministered to some 500 academic physicists and chemists in the greater Boston area. This kind of learning experience is designed to enable students to develop a greater appreciation of scientists' information needs, reading habits and patterns; to assist them in recognizing the many problems that may inhibit scientists' library use; and to gain some insight into the role of libraries and librarians in the scientific community.

While many of the analyzed results, substantiated by several earlier studies *(2–8)* are much as expected, there are some interesting new findings that differ from the conclusions of previous investigators.

Methodology and Sample

In order to achieve consistency in data collection by all twenty-four students, the questionnaire method was used. As expected, the questionnaire method does have its inherent limitations, such as a small number of returns, incomplete questionnaires, and double entry of data. When necessary, telephone or personal interviews were made.

Since this was a class project, no attempt was made to distinguish varying information needs among those of different academic ranks, or those engaged in pure as contrasted with applied, theoretical, or experimental research. In this respect, the present investigation differs from other studies done by Flowers *(6)* and Herner *(7)*.

Each student in the course was responsible for 20–25 questionnaires. Altogether, some 500 questionnaires were sent out. Three hundred thirty-nine were mailed to physics faculty members, as listed in the university catalogs of the six institutions surveyed. The initial return rate from the physics sector was 43%. In-person and telephone interviews and follow-ups yielded another 33 returns. The total final return was 179 questionnaires or 52.8% of the potential returns. (See Table 1 for institutional breakdown.) Although the overall average of returns is less than 60%, returns from all six institutions do reveal many similarities and parallels. A few general trends emerge rather clearly.

Results of the Survey

The results can be grouped into four main areas:

1. *Channels of Communication or Sources of Information.* The physicists were asked to rate, on a scale of one ("most important") to five ("least important"), formal publications, semiformal publications, reference materials, meetings and conferences, and informal oral communications. For the purposes of analysis, however, a weighted point value was assigned to each rating, e.g., a rating of "1" was assigned five points, "2" four points etc., so the larger the point value, the more important the source (Table 2). The results in Table 2 confirm the findings of several earlier surveys and studies, such as the AIP study *(3)*, the 1969 National Academy of Sciences Physics Survey reported by Bromley *(4)*, and findings of Allen & Cohen *(2)*, Flowers *(6)*, Herner *(7)*, and Woods *(8)*: Physicists do rely most heavily on primary sources of information,

Table 3. Number of Journals Scanned Per Week by Physicists Surveyed

No. of Journals Scanned	BU	Brandeis	Brown	Harvard*	MIT	NE	Total	% of the Total
0	1	1	0	1	1	0	4	2.16
1–3	4	8	10	30	34	19	105	56.76
4–6	3	7	4	24	17	7	62	33.51
7–9	0	1	0	6	3	0	10	5.41
More	1	0	0	3	0	0	4	2.16
						TOTAL:	185	100.00

* Total includes returns of Harvard chemistry faculty.

Table 4. Journals Scanned Weekly by Physicists

Rank	Journal Title	No. of Physicists	Rank	Journal Title	No. of Physicists
1.	Phys. Rev. Letters	73	12.	J. Amer. Chem. Soc.	3
2.	Phys. Rev.	66	12.	J. Geophys. Res.	3
3.	Phys. Letters	30	12.	J. Low Temp. Phys.	3
4.	Nuovo Cimento	12	12.	J. Phys. Chem.	3
4.	Science	12	12.	Nuovo Cimento Letters	3
5.	J. Chem. Phys.	10	12.	Sci. Amer.	3
5.	Nuclear Phys.	10	13.	Ann. Phys.	2
6.	Phys. Today	9	13.	Appl. Phys. Letters	2
6.	Rev. Mod. Phys.	9	13.	Astron. J.	2
7.	Nuclear Instr. Methods	8	13.	Astronomy Astrophys.	2
8.	J. Phys.	7	13.	Current Phys. Adv. Abstr.	2
9.	Nature	6	13.	J. Amer. Statist. Assoc.	2
9.	Solid State Comm.	6	13.	J. Math. Phys.	2
10.	Astrophys. J.	5	13.	Optics Comm.	2
10.	J. Appl. Phys.	5	13.	Optic. Soc. Amer. J.	2
11.	Amer. J. Phys.	4	13.	Phys. Fluids	2
11.	J. Phys. Chem. Solids	4	13.	Sov. Phys.—JETP	2
12.	IEEE Proc.	3			
				Total Number of Journals Scanned: 77*	

* Only journals scanned by two or more physicists are listed in Table 4.
† Data from Harvard faculty are not included in this table due to the diffusion of the journals listed.

Table 5. Journals Considered Most Important by Physicists

Rank	Journal Title	Weight Point*	Rank	Journal Title	Weight Point*
1.	Phys. Rev.	321	14.	J. Amer. Chem. Soc.	15
1.	Phys. Rev. Letters	321	14.	J. Geophys. Res.	15
2.	Phys. Letters	150	15.	J. Appl. Phys.	14
3.	Nuclear Phys.	79	16.	J. Low Temp. Phys.	12
4.	Nuovo Cimento	44	17.	Appl. Phys. Letters	11
5.	Astrophys. J.	33	18.	Ann. Phys.	10
6.	J. Chem. Phys.	30	19.	J. Phys. Chem.	9
7.	J. Math. Phys.	26	19.	J. Phys.	9
7.	Science	26	20.	Astrophys. Letters	7
8.	Nuclear Instr. Methods	25	20.	Phys. Fluids	7
9.	Rev. Mod. Phys.	23	21.	Comments Math. Phys.	6
10.	Amer. J. Phys.	22	21.	Sci. Amer.	6
11.	Solid State Commun.	21			
12.	Astronomy Astrophys.	20		AND 54 OTHER JOURNALS	
13.	Nature	16			
13.	Phys. Today	16			

Data from Harvard faculty are not included in this table.
* Importance was indicated in a scale of 1 to 5. Weight points were calculated by considering every rating of "1" five points, "2" four points etc. . . . A rating of "1" denoted "most important."

Table 6. Journals Subscribed to by Physicists

Rank	Journal Title	No. of Physicists
1.	Phys. Rev. Letters	55
2.	Phys. Rev.	41
3.	Phys. Today*	7*
3.	Rev. Mod. Phys.	7
4.	Astrophys. J.	6
4.	Science*	6*
5.	Amer. J. Phys.	5
5.	J. Chem. Phys.	5
6.	Appl. Phys. Letters	3
7.	Amer. Scientist*	2*
7.	Ann. Phys.	2
7.	Astron. J.	2
7.	Current Papers in Physics	2
7.	J. Amer. Chem. Soc.	2
7.	J. Amer. Statist. Assoc.	2
7.	J. Geophys. Res.	2
7.	J. Math. Phys.	2
7.	Phys. Fluids	2
7.	Sci. Amer.	2
AND 27 OTHER JOURNALS		

Data from Harvard faculty are not included in this table.

* Statistics may not be accurate. These are free to society members, therefore many faculty may not indicate them as subscriptions.

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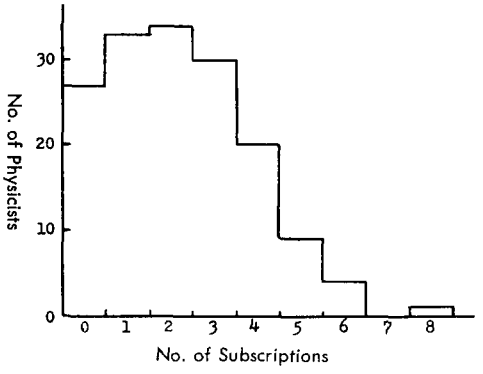
particularly on journal sources *(9)*, with semiformal publications and informal oral communication running a fairly close second. This is probably because formal publications are considered to be "the end product of most scientific work" *(10)* which have the quality of information being offered *(11)*. Reference materials are least important to physicists. For physicists at Harvard and MIT, conferences and meetings, and informal oral communication with fellow scientists are more highly considered as sources of information than at the other four institutions.

2. *Journal Use.* Table 3 suggests that physicists generally scan from one to six journals, with an average of three titles. Only four scientists scan more than nine journal titles per week. These figures are much lower than those reported by Törnudd in 1953 *(12–13)* and Bernal in 1948 *(14)*. In those studies, academic scientists were found to read seven to ten journals a week. C. W. Hanson reported that scientists regularly scanned an average of ten journals a week, with few scanning less than five *(9)*. The observed differences may be accounted for by the changing structure of scientific literature in the last decade, the proliferation and increased use of letter journals, the availability of current awareness publications, such as *Current Contents,* and various SDI services, and the trend toward greater specialization among scientists.

Figure 1. Distribution of Journal Subscriptions



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Letter journals, because of their up-to-dateness and brevity, seem to be especially popular among journals scanned. It is obvious that beyond a few general physics titles, the listings diffuse rapidly to highly specialized journal titles, the individual selection depending upon the respondent's particular research interests. The 179 physicists responding to the survey generated a list of 77 journals scanned regularly (Table 4 lists only those scanned by two or more physicists). Only *Phys. Rev., Phys. Rev. Letters, Phys. Letters, Nuovo Cimento,* and *Science* were mentioned more than ten times.

As shown in Table 4, the top three journals scanned regularly by physicists in all six institutions surveyed are *Phys. Rev. Letters, Phys. Rev.,* and *Phys. Letters.* These ranked high in Chen's earlier use study *(5)* and in other abstract and citation studies *(15, 16)*.

The results in Table 4 agree with those titles considered most important to the physicists' own work (Table 5), and those they subscribed to (Table 6). *Phys. Rev.* is subscribed to by at least 30% of the physicists in the sample.

Figure 1 shows the distribution of the number of journal subscriptions. Al-

Table 7. Preferred Study Areas

Sources	BU	Brandeis	Brown	Harvard*	MIT	NE	Total
Colleague's Collection	0	0	6	9	10	1	26
Departmental Reading Room	7	6	12	21	48	5	99
Library	5	15	12	38	23	21	114
Other	4	1	1	1	2	2	11

Note: The figures for "Library" include those for the use of departmental libraries.
Double entry is allowed.
* Includes Harvard chemistry faculty.

Table 8. Frequency of Library Use

Frequency	BU	Brandeis	Brown	Harvard*	MIT	NE	Total	% of Total
Daily	0	1	0	11	4	2	18	9.47
Several Times/Week	6	10	3	22	13	11	65	34.22
Once/Week	1	4	5	13	20	8	51	26.84
Several Times/Month	2	2	5	9	10	4	32	16.84
Once/Month	0	0	1	9	5	1	16	8.42
Less Than Once/Month	1	0	3	1	3	0	8	4.21
					GRAND TOTAL:		190*	100.00

* Data include Harvard chemistry faculty.

Table 9. Reasons for Library Use

Reasons	BU	Brandeis	Brown	Harvard*	MIT	NE	Total
Keeping Up	7	16	10	39	31	19	122
Browsing	8	12	5	29	27	7	88
Specific Information	7	13	14	56	48	22	160
Other	0	0	0	1	4	1	6

Double entries allowed.
* Data include Harvard chemistry faculty.

Table 10. Success in Library Use

WITH LIBRARIANS' HELP						WITHOUT LIBRARIANS' HELP					
	Scale*						Scale*				
University	1	2	3	4	5	University	1	2	3	4	5
BU	1	5	1	0	0	BU	0	6	3	1	0
Brandeis	3	7	0	1	0	Brandeis	2	12	2	0	0
Brown	2	8	1	0	0	Brown	1	10	4	0	0
Harvard†	18	16	4	1	0	Harvard†	17	35	8	1	1
MIT	11	21	4	3	2	MIT	8	33	11	3	1
NE	7	10	3	1	1	NE	5	10	5	2	2
Total=131:	42	67	13	6	3	Total=180:	32	106	33	7	2
	83.2% (of total)						76.6% (of total)				

* "1" denotes "always successful" and "5" "always unsuccessful."
† Data include Harvard chemistry faculty.

Table 11. Reasons for Library Non-Use

Reasons	BU	Brandeis	Brown	Harvard*	MIT	NE	Total
No Need	5	6	6	32	14	14	77
Time	2	5	8	13	22	9	59
Physical Location	0	0	4	3	11	0	18
Other	1	4	2	7	3	2	19

* Data include Harvard chemistry faculty.

though the range was 0 to 8, the greatest number was centered at the lower end of the scale, with 42% of the sample subscribing to 1 or 2 journal titles; 2.2 is the mean average. In light of what is revealed in Table 6, it is safe to suggest that one of the 2.2 titles is most likely to be *Phys. Rev.* Although *Phys. Letters* is considered the third most important physics journal, it is not subscribed to by any of the respondents. The mean number of journal titles subscribed to by physicists agree with Herner's findings *(7)* but is much lower than suggested by the data of Törnudd *(13)* and Bernal *(14)* (between 2.7 to 4.2 titles). The difference may be due to the rising cost of subscriptions, particularly in recent years, the ready availability of institutional subscriptions, and the accessibility of needed journal titles in conveniently located departmental reading rooms, patronized by over 55% of the sample for reading journals to which individuals did not subscribe (Table 7).

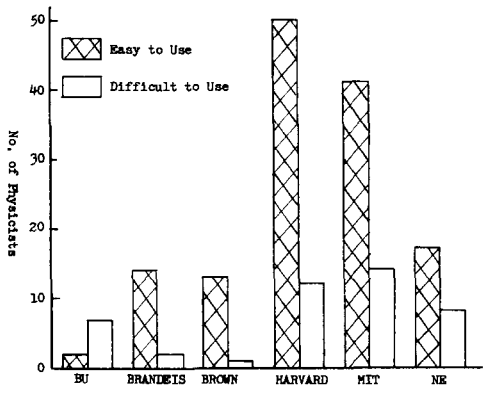
3. *Library Use.* Table 8 reveals that the average academic physicist uses the library slightly more frequently than once a week. In Slater's 1962–1963 survey of 223 academic scientists, it was found that 82% used the library once a week or more *(17)*. In 1968, Slater and Fisher found that 69% of the physicists they surveyed used the library daily or several times per week, and 25% used it once per week or several times per month *(18)*. Our study reveals that 20.5% of academic physicists use the library once a week or more. Briggs' survey of MIT Science Library users showed that the number of visits averaged 4.2 per week *(19)*, by comparison with 2.2 per week in this study. One should keep in mind that earlier studies were based on data collected from questionnaires completed by people entering the library, and would, therefore, favor heavy users of the library.

It seems apparent from Table 7 that the academic physicists prefer to use departmental reading rooms or libraries if they are comfortably and adequately equipped, rather than large libraries, as demonstrated specifically in the case of the MIT Physics Reading Room. The figures for Harvard actually indicate major use of the Division of Applied Physics and Engineering library.

The question concerned with reasons for library use yielded some interesting data (Table 9). The library seems to be used primarily for locating specific information, with "keeping up" a close second, and browsing as third. Similar results were reported in Slater's studies *(17, 18)* and by Hanson *(9)*. These purposes are, of course, not mutually exclusive.

When searching for information in the library, Table 10 shows that a considerable number of the physicists surveyed (approximately 25%) do not seek librarians' assistance. Although this figure is not as high as the 2.8:1 estimated by Hanson *(9)*, 70% by both Flowers *(6)* and Herner *(7)*, and 88% by Shaw *(20)*, it, nevertheless, does suggest room for improvement in terms of the scientist-librarian relationship. Librarians' help does not appear to have made much impact in terms of enhanced success in finding information, though the success rate was slightly higher with librarians' help than without it: 83.2% always or usually finding what they want, as compared with 76.6% when the librarian was not consulted. Rates of partial success and failure, as shown in Table 10, are much

Figure 2. Use of Library Classification Scheme



lower than those found in Slater's study *(17)*.

Table 11 shows that 45% of the academic physicists feel there is no need for them to use the centralized library more often than they have been. Time seems to be the major factor in nonuse of the library. Distance is also a factor indicated by some. This seems consistent with the physicists' desire to use a departmental reading room, which is closer to them than the main library. Once they are in the reading room, it is easier and less time consuming for them to browse and locate specific information. Library administrators ought to take these factors into serious consideration when they plan for library expansion and development within an institution.

Complaints have often been voiced by scientists about the classification schemes used in libraries. From the responses to this study (Figure 2), however, it seems apparent that librarians need not concern themselves greatly with problems in this area. Of those sampled, 74% report that they find library classification schemes easy to use.

4. *Role of the Library and Librarian in a Scientific Community.* Opportunity was provided for open-ended comments on librarians, and library and information services in general. Although the answers cannot be quantified and analyzed statistically, nevertheless, they certainly reflect how physicists generally view libraries and librarians.

Libraries were considered largely as storehouses of materials. The services cited more than once are all among the "custodial services" offered by the library, such as making books and journals readily available, assisting users in locating a specific document, maintaining and displaying preprints, maintaining an up-to-date and comprehensive library collection, and providing photocopying facilities and interlibrary loan services.

Physicists appear to view the librarian's role as one of service, mainly as housekeeper, organizer, and manager of library materials. Librarians are considered to be most helpful in areas of acquisitions, cataloging, filing, and locating materials. Only one respondent saw the librarian as a colleague, and most preferred that the librarian take a helpful, but quiet role, "doing a good job but unnoticed." On the other hand, there are few who do view the librarian as an "information broker" who is vital in the information transfer process. This suggests that librarians can assume the role of colleague and be an influential force in the total communication system only if they can astutely place proper priorities on needed and crucial services and problem areas.

General suggestions for improving the dissemination of information were also solicited. Respondents mostly emphasized a desire for more varied types of publications and library services, and for new types of technology. Quick photocopying, micro-technology, computerized information storage and retrieval were specifically suggested. It is generally thought that the scientists do not really want to use these newly developed tools themselves, yet they do feel that the presence of the new technological applications in the library would enable librarians to provide better and faster services. "Time" is always a key factor!

Conclusions

It is apparent that the academic physicist generally engages in specialized research activities, covering many fields

and subject disciplines, as revealed by the journal titles scanned regularly and subscribed to. Regardless of the scientists' apparently strong sentiment in favor of informal, oral communications with their colleagues and fellow scientists, formal publications continue to be considered their primary source of information. Therefore, they continue to use the library quite frequently. It is obvious that despite their somewhat negative attitudes toward libraries and librarians in general, there are plenty of opportunities for librarians to improve their image and to enlarge their restricted role by providing scientists needed library services with and/or without the help of new technology. Knowing scientists' strong desire for up-to-date and comprehensive information, librarians must reorient their thinking and practice in the acquisition, organization, repackaging, and utilization of both new and existing knowledge to meet scientists' information needs. Only then will respect, confidence, and trust in the librarian follow naturally.

Acknowledgments

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Mrs. Donna Savicki, one of my students, volunteered to group data from each member of the class. Her conscientious effort made the class analyses possible. I am grateful to all my students for their enthusiasm, support, and interest in this project. Many helpful suggestions and corrections from Professor Philip M. Morse of MIT and Professor Thomas J. Galvin of Simmons are also gratefully acknowledged.

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Overseas Report

Japanese Medical Libraries—A Brief Visit

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■ A brief visit to several Japanese medical libraries and information centers revealed similarities and dissimilarities with their United States counterparts. All the institutions had indexes, many English language journals, and photocopying requests. Differences appeared in the reference services provided. The information centers were computer oriented.

ON A RECENT VISIT to five Japanese medical libraries, the author could easily have completed a literature search on a bio-medical subject, even though she can read no Japanese. This would have been possible because all five subscribed to *Index Medicus,* the comprehensive index of bio-medical literature prepared by the National Library of Medicine. Also in each library was a large number of the most common English language journals indexed by this tool. Although the five medical libraries visited comprise but a small percentage of the total Japanese medical school libraries (five of the sixty in Japan), two, the University of Tokyo and Kyoto University, have a status in Japan similar to that of Oxford and Cambridge in England (*1,* p.1225).

Since so few medical libraries were visited, no generalizations about Japanese medical libraries as a whole can be made. However, in the ones visited, there were some interesting points both of similarity and dissimilarity with their United States counterparts. Some pertinent information about the Japan Medical Library Association was also obtained *(2, 3).* The library journal *Igaku Toshokan (Medical Libraries)* published by this Association contains articles on subjects similar to those found in U.S. library journals *(4).* One of the directors of this Association, Mr. Yoshio Amano, assistant librarian, Keio University Medical Library (Tokyo), arranged my visits to Jikei University, Keio University, the University of Tokyo, the International Medical Information Center, Inc. (IMIC), and the Japan Information Center for Science and Technology (JICST), also in Tokyo. He made appointments at these institutions, transported me, and interpreted at each one.

The points of similarity with U.S. libraries are many. As in the U.S., many articles are photocopied for library patrons in Japan. Table 1 shows the 1972 photocopying figures for the five libraries visited. There are large numbers of interlibrary loan requests sent to these libraries. In Japan, the Japan Medical Library Association maintains the medical interlibrary loan system. In the United States, the National Library of Medicine

Table 1. 1972 Photocopying Figures

University	Staff Size	Kind of Institution	Number of Photocopying Requests	Number of Sheets
Keio	22 (17 librns.)	Private	212,902	1,386,275
Tokyo	20 (15 librns.)	Government	88,629	610,000
Jikei	14 full time 3 part time	Private	35,483	
Showa	9	Private	27,250	
Kyoto		Government	35,004	

Table 2. Interlibrary Loan Traffic

University	Requests From Other Libraries	Requests Sent to Other Libraries	Ratio of Lending to Borrowing
Keio	32,335	6,601	5 to 1
Tokyo	7,675	742	10 to 1
Jikei	5,654	1,031	5 to 1

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has divided the country into regions with either a centralized or decentralized regional medical library in each region. In Japan, no such regionalization exists at the present time, and there is no comparable National Medical Library. Table 2 depicts the 1972 interlibrary loan traffic in three libraries. Note the ratio of lending to borrowing.

In the U.S., it is a common practice to have subject cards in the card catalog. According to the statistics of the Japan Medical Library Association, only three medical libraries have subject cards: the libraries of Sapporo Medical College, Kyushu University Medical School, and Keio University Medical Library. Instead of the subject card, most Japanese university medical libraries use the shelf card, called the classification card.

In the U.S., many libraries have gone, or are going into the acquisition and lending of audiovisuals of all kinds. According to Mr. Amano, in Japan, the only film library in a medical university is the one at Keio University. In this library, the viewing conditions are poor, particularly the audiovisual carrels. However, the film library circulates movies, slides, projectors, and audio cassettes. The library expects to have video tapes soon. At the present time, this library subscribes to all parts of *Audio-Digest,* except for the section on general practice. Students listen to *Audio-Digest* cassettes in order to train their ears to English usage.

A brief description of the salient features of four of these five libraries follows. First, however, Table 3 is a summary of the number of volumes held and the journal titles received, foreign and domestic, in the four medical university libraries.

Medical Library and Information Center, Keio University

Among the university medical libraries visited, Keio University is unique in that it has a history of open stacks, the granting of use privileges to other university medical faculties, and many user reference services, including literature searching and current awareness. The university, founded in 1858, established its present medical library building in 1937. It was the first centralized medical library in Japan *(5).* Keio University is recognized throughout the country as one of the nation's leading institutions *(1,* p.1225).

The medical college serves an on-campus user population of 400 students and approximately 2,000 faculty members, interns, residents, etc. Although the university was not in session at the time of my visit, there were many patrons in the library. Apparently the library staff seeks to assist faculty, students, and research workers. (Only Keio University extends library and reference privileges to physicians not associated with that institution.) The 1972 annual statistics showed 770 literature search requests received, with 731 processed. The library has a TELEX for interlibrary communi-

Table 3. The Collections

Institution	Total Volumes	Foreign	Domestic	Journal Titles Received	Domestic	Foreign
Keio	115,518 33,889 M 81,629 J	70,875	44,643	2,100	900	1,200
Tokyo	139,550 56,907 M 82,643 J	38,914 M	17,893 M	2,641	763	1,878
Jikei	114,763			1,240	584	656
Showa	71,000 47,000 M 27,000 J	70%	30%	1,202	555	647

M = monographs. J = journals.

cation with the other 12 Japanese medical libraries with similar equipment and with the U.S. National Library of Medicine.

It was of interest to note in this library, as well as the others, the large numbers of volumes in languages other than Japanese. (In none of the libraries were figures available on how many of the foreign volumes are in the English language, but Mr. Amano believes that the larger percentage of the foreign volumes are in English.) Within the last year, Keio University Medical Library made a survey of journal usage and eliminated some of the seldom used titles. In this library, books and journals are selected by the acquisitions librarian. There is, however, an advisory library committee with representatives chosen from different medical faculty departments.

The library's computer-produced *List of Foreign Medical Periodicals* shows that 28 sections of *Excerpta Medica* are received. It also reveals scattered holdings of most of the journal titles before the late 1960s. On many of them, complete holdings seem to date from 1968.

The library uses the National Library of Medicine Classification system. There are many printed signs, in Japanese, in the book areas to explain to the patrons the subject content of the classification symbols in each area.

Tokyo University Medical Library

Another active medical library is that of Tokyo University, which recently observed its centenary. The library staff includes one programmer and one key punch operator. Some of the staff are graduates of Keio University; some are graduates of the National Junior College of Library Science. However, there are no master's degree librarians at this library.

Tokyo University Medical Library differed from Keio University Medical Library in that Tokyo University is open only to its own patrons. Here, an attendant, stationed near the entrance, verified one's identity before he or she was allowed in the library. In addition, everyone had to sign in. Although my visit came at a vacation period, the library had a number of users.

Even though this library has closed stacks, the reference area, which contains the indexes and bibliographic tools, is open. (Most of the sections of *Excerpta Medica* as well as *Index Medicus* are received.) Journals are divided, with bound journals in one area, unbound in another, and with foreign and domestic journals separated. In addition, the review type of secondary journals are not kept with the primary journals. However, there is a reading room for medical students.

A computer of Japanese manufacture is physically located in the library building. To date, the only library functions that have been computerized are the serials, but future planning calls for computerization of other library activities. The computer is used by other divisions of the university as well.

The statistics indicate that this is a much used library. Figures for 1972 show

a circulation of 32,988. The library serves a student population of approximately 500, of which 400 are medical. The medical faculty, interns, residents, etc., number about 2,000.

This library does not offer reference services. It does not have an "integrated" reference librarian. The patrons are supposed to take care of themselves. Although the library does not have a literature searching service, it can send requests to the International Medical Information Service (IMIC) and to the Japan Information Center for Science and Technology (JICST).

Tokyo University Medical Library's classification of books is extremely interesting. The National Library of Medicine Classification is used for medical books, both foreign and domestic. However, the Universal Decimal Classification is used for non-medical books. No subject cards are used. The shelf card takes the place of the subject card.

Jikei University School of Medicine Library

Jikei University Medical Library was to me the most attractive, physically. In existence since 1881, the library is now housed in a new, attractive, carpeted building, completed in 1967. Its four levels of stacks are all open for readers with 223 seats provided throughout. In addition, available to the faculty for study are eight tiny rooms and one larger room which can accommodate six people.

The stack areas are divided in the following manner. The first level of stacks has foreign periodicals since 1940; the second level, Japanese periodicals; the third level, monographs, both foreign and Japanese; the fourth level, foreign periodicals before 1940. There are several public catalogs. Here, too, there are no subject cards for monographs. Instead, there is an author–title catalog, and a classified catalog, N.D.C., the Japanese classification system. The periodicals have catalogs. One is a title catalog; the other is a classified catalog of special issues.

Jikei University Medical Library serves 500 students and a faculty of 1,060. Also, the nursing students (about 340), who have their own small library, may use this one. Bibliographic reference service is available for faculty members for a maximum of three years of retrospective searching. The estimated length of time needed for the literature search is two to three weeks.

Showa University Medical Library

The author visited Showa University on her own and had a certain amount of language difficulty. The university was not in session; so one could not judge how crowded it normally is. However, the library seemed to have ample chairs and tables for study. Some students were in the library.

This library staff does no literature searching. If a professor asks for help, he is given it. However, the usual procedure is for him to do his own library work. Both professors and students use the library, and both groups have the same loan privileges: one week for books and journals.

There were several levels of stacks, with some journal holdings back to the 1890s. I was told that the library has open stacks, but is open only to its own users. Mr. Itabashi, the librarian, informed me that physicians not associated with a university use Keio University Medical Library.

A library committee with representatives from different medical faculty departments selects books and journals.

Kyoto University Medical Library

An unexpected trip to Kyoto, on a Saturday afternoon, proved disappointing. The library was closed. However, a considerate young man in the pharmacy of the hospital arranged to have it unlocked. Here, too, language was a problem, and limited information was obtained. The university is old, but the present library building was completed in 1965. A plaque near the entrance ac-

knowledges the financial contribution of the China Medical Board.

The library at Kyoto is mentioned only because it held both *Index Medicus* and a large number of the most common United States medical journals. I viewed only the current journal room. Mr. Amano obtained the photocopying figures for me.

Here again, the institutions were in an urban, crowded area, with small residences, and/or buildings adjacent to the university.

IMIC and JICST

In addition to the five medical college libraries, both the International Medical Information Center, Inc. (IMIC), and the Japan Information Center for Science and Technology (JICST) were visited. I had requested that Mr. Amano arrange these visits because IMIC indexes many Japanese journals for the National Library of Medicine for inclusion in *Index Medicus,* and JICST has a copy of the National Library of Medicine's MEDLARS tapes (the computer tapes from which *Index Medicus* is printed). Therefore, JICST performs MEDLARS searches in Japan from these tapes.

IMIC and JICST are two separate and distinct organizations. The central office of IMIC is located in a building approximately one block away from Keio University Medical Library. Housed in the Keio University Medical Library is that portion of the staff of the International Medical Information Center which does the indexing, current awareness services, photocopying, and translations for that agency. It was a little unclear what reference services are now being performed by the Keio University library staff and which by IMIC staff.

International Medical Information Center

The International Medical Information Center was established Apr 1, 1972, as a nonprofit legal foundation approved by the Ministries of Education and of Health and Welfare. A brochure states, "The new foundation has been established by completely taking over the information service functions which had been offered as part of the services of the Medical Library and Information Center of Keio University" *(6).*

IMIC has 10 stated objectives. They are literature search, clearing service (i.e., to answer "who," "where," "what," and "how" in medical research), international cooperation, compilation and publication of secondary references, translation service, copying and printing service, consultation service, developing the information system for medical education, developing the information system for medical care and computer search of medical literature *(6).* (The center is currently developing an on-line system for the medical literature published in Japan.)

At the present time, IMIC is performing about 800 manual literature searches per year. Manual means using the printed indexes, rather than the computer. There is a charge for membership in the IMIC and for its services.

The International Medical Information Center has four indexers at Keio University. Two of them were trained at the National Library of Medicine, Bethesda, Md. IMIC indexes 96 Japanese bio-medical journals for inclusion in *Index Medicus.*

IMIC's translation section is located at Keio University also. One of the current awareness tools produced by the International Medical Information Center is *Computer in Medicine* (v.1, no.5, Aug 1973), which lists citations in this field, first in an English language section, then in a second section, in Japanese. Apparently, the literature analysis, formerly done by Keio University Medical Library, is now being continued by IMIC.

Japan Institute for Science and Technology

JICST, on the other hand, was not located at a university library. It has its own rather extensive library of about

8,000 journals arranged by computer number, many technical reports, and many kinds of patent specifications. Approximately 5,000 of the journals are foreign.

JICST, established in 1957, is a nonprofit institution under the executive control of the Science and Technology Agency, Prime Minister's office. Its purpose and activities are to collect and process world-wide scientific information; to disseminate information; to offer services to assist in science information and the solution of difficult problems related thereto. In fulfilling these, JICST publishes abstract journals in the physical sciences and engineering, maintains a photoduplication service, translation services, and investigative services. It receives its income from the government and from the fees it charges for its services.

JICST uses its working collection of journals and documents as source documents both for abstracting and photoduplication. The main work of JICST is to prepare abstracts, which are computerized. Approximately three keywords are assigned to each article. The data elements are keypunched to paper tape. The Kanji (Chinese-character) teletypewriters and flexowriters were impressive. About 2,000 Kanji and Kana (Japanese syllables), and 400 alphabet letters, numbers, symbols, etc., are available. These 2,400 elements are distributed over 190 keys, with up to 13 elements on each key. Selection is controlled by shift-function keys. The operators must use two hands. Watching the key punch operators operate these machines at an average punching speed of 50-60 words per minute was fascinating. The key punched data are fed to the Japanese made computer, FACOM 230 Model 50 *(7)*. Apparently much proof reading is done.

JICST's major publication is *Current Bibliography on Science and Technology*. It has nine sections, which cover the physical sciences and engineering. JICST produces several other publications, including an abstract journal on environmental pollution, which is a major problem in Japan's metropolitan areas. JICST's other periodical publications are *Foreign Patent News, Documentation and Information, Technical Information for Small Industries, Technical Highlights from Overseas,* and the *Annual Index to Japanese Patents.*

Of primary relevance to a medical librarian were the MEDLARS searches performed in Japan by JICST, using computer tapes from the National Library of Medicine. JICST runs two types of MEDLARS searches. One is the demand search, in which the user states the particular problem on which he wants citations. JICST batches these searches, and they are run once a week. At the present time, approximately 40 searches are run per month. The demand grows, as more learn about the service.

However, JICST also has 21 topics on which it runs standard SDI searches using the MEDLARS tapes. I was told that the Keio University Medical Library suggested some of the topics which they believed to reoccur most frequently. The 21 are collateral blood flow of coronary vessels; chromosome aberrations induced by various industrial materials; diabetic angiopathy; mechanisms of induction of hepatic microsomal drug-metabolizing enzymes; adverse effects of pesticides to humans; rehabilitation in heart diseases and application of telemetry, electrocardiography and monitoring systems on the cases; transplantation of pancreas, liver and spleen; effects of antibiotics to kidney; adverse effects of mercury, lead and cadmium; computer utilization in hospital administration searching; prostaglandins; aplastic anemia; diagnosis and therapy by ultrasonics; antiviral agents; medical aspects of lithium; vaccines for measles, smallpox and polio; medical aspects of lasers; therapy of leukemia; medical aspects of PCB; muscular dystrophy.

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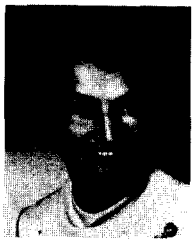

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A Tour of the Library—By Audiotape

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■ A viable alternative to the librarian conducting a personalized tour of the special library is the utilization of a cassette tape player and accessories to lead the user through the building while describing the available resources. Guidelines for developing an audiotape tour are presented.

THE coming of summer brings an influx of college and university faculty members to spend eleven weeks at Langley Research Center to study a modern systems design problem. These Fellows of the NASA-ASEE program are introduced to Langley and its programs with a portion of the introduction devoted to the library. The subsequent orientation to the library facilities is provided by the staff to individuals and to groups.

Two levels of orientation are required when acquainting a patron with the special library. The first requirement is for a general description of the physical layout of the library and the location of the primary tools such as the card catalog, reference sections, and current journal displays which are available in that particular library. The special librarian can usually assume that the patron is aware of other libraries through his past educational experiences but care must be taken not to overlook the obvious. The second requirement is an orientation which will inform the patron of specific materials and services available in the library and their use—for example, how to use the Science Citation Index.

The LRC Technical Library has met the first requirement with an audiotape cassette tour. A patron who indicates a desire to know more about the library is offered the tour. If he does not wish to avail himself of this type of orientation, a librarian will personally guide the patron through the building.

The tour consists of a cassette player with earphone, a map, and a handbook to the library. For groups, the earphone is not used and additional maps are distributed. The patron is carefully guided to the card catalog, past the shelves, through the reference section, past the current subscription displays and shelved bound volumes, around the reprography section, past the RECON Computer Search Terminals, past the offices of the Subject Specialists and the Librarians, and then back to the reference counter to complete the tour.

Advantages

The audiotape tour does not require the services of a librarian and can be presented to groups or on an individual basis. It is estimated that there will be a savings of 120 manhours per year at the LRC Technical Library as awareness of the services available increases.

The tour does not have to be scheduled. This is important to the researcher

who needs a quick overview before beginning to delve into the library collection. The librarian finds this valuable since there are fewer interruptions of his work to act as a guide.

Those persons taking the tour as a group are not delayed by one or two while others wait for the next explanation *(1)*. One tour need not be completed before the next one begins.

The orientation is uniform. Each patron is introduced to the same information about the services of the library. Previously some areas were neglected because of oversights by librarians suffering from peak workloads and heavy schedules. There were also variations caused by different guides and the multitude of services available.

Tips on Developing a Tour

Tours on audiotape are conducted by many organizations. Museums lead the visitor through the halls while listening to the history and importance of the artist whose painting is displayed. Airlines have fly–drive tours to major cities of the world which include a personal guide cassette of history, culture, food, and customs of the city to be visited with maps and instructions. Rent-a-car enterprises have "U-tours" of many cities *(2)*. Park Services guide the tourist over trails and through the countryside while history is relived by journeys through national parks. If any such tour is available, it should be taken to learn from existing methods. However, if none of these are accessible, the novice will want to consider the following.

1. Not all libraries are amenable to tours. If there is only one room, a tour may not be needed. A discussion on tape informing the patron of the services may be more applicable. For libraries having several floors, tours are more difficult but still practical. Division libraries will require separate tours at each location.

2. A professional voice should be used whenever possible. An amateur voice quickly causes the listener to tune out the tour or push the stop button. If a professional voice is not available, select an even-toned voice with the least accent among the people willing to read for you.

3. The script should be written by the librarians. Their knowledge of what questions the patrons ask is invaluable. A professional scriptwriter can be used to "polish" the results.

4. Use quality equipment. A professional tape played on a poor player yields poor results. The player should have a shoulder strap to leave hands free to hold a map of the building.

5. The route of the tour should be suitably indicated. Several methods are available. The LRC Technical Library uses numbered disks which are suspended from the ceiling above the points on the tour that are being described. Corresponding numbers are noted on the map. The suspended disks are the same color as the ceiling tile. Until specifically noted, they are obscure. Another viewpoint would be to contrast the colors of the disks with the ceiling tile. This causes visitors to ask, "What is that?"—and gives the librarian an opportunity to publicize the tour. Additional methods are footsteps on the floor (upsets the cleaning lady); arrows to follow; cartoons pointing the way; and no external information (lead the patron by directions on the tape).

6. Provide specific information as necessary. Since one of the most asked reference questions concerns the location of the restrooms, mention them as they appear. Fire exits should be subtly noted ("for accelerated departure from the building you will observe the exit on your left").

7. Pace the tour. Allow the person time to reach the card catalog before you explain its value. Interludes between points can be filled by general description or music.

8. If a map is provided, put it on a stiff backing. No route is more difficult to follow than one on a sheet of paper which bends and curls—unless it is a folded road map.

9. Have a few trial runs. Patrons and librarians will be delighted to help improve the final product. Our tour was

vastly improved by a patron who suggested the use of a shoulder strap rather than a hand held player.

10. Record the tape on two sides. This avoids the necessity of having to rewind the tape each time. The cassette is turned over to its other side for the next tour *(1)*.

11. Provide an opportunity for browsing. Explain how to stop and restart the tour to look at the item just described. If the patron stops to look at a current journal display as the tape continues to the next point of interest, confusion is the result.

12. Emphasize the introductory nature of the orientation. The intent of the tour is to show physical locations and generally describe the services and materials available. Concurrently, it should stress that the librarians can be consulted for more information about the library, its holdings, and the services provided.

Conclusion

The audiotape tour is a viable alternative to personal orientation of the special library. The advantages of an audiotape tour are uniformity of description, ease of scheduling, and freedom for the librarian. Developing a tour is not difficult but requires some knowledge of the methods available for best results.

Once introduced to audiotape cassettes many possibilities for innovation become apparent. First level orientation is accomplished by the audiotape tour. It can also be used to meet second level orientation needs by providing specific information. A tape can unravel the intricacies of the card catalog or explain the Library of Congress Classification System. A patron can be led through the various indexes or listen to a discourse on library polices and procedures. Many possibilities exist for this relatively new and definitely fascinating medium.

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Setting Up a Special Collection on Water Pollution in a University Library

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■ Three interdisciplinary research teams in the Cleveland area are studying pollution in Lake Erie. Materials on water pollution are scattered in various locations and among various subject classifications. The establishment of a special collection, within the university library, the complexities of identifying and collecting reports in the environmental area, locating agencies concerned with water pollution, and recording the location of other local collections of data are described. Included is a discussion of how the Lake Erie Study Collection functions as a special library, its librarian maintaining direct links with the research project members.

THE UNIVERSITY referred to in the title of this paper is Case Western Reserve University, Cleveland, Ohio. Cleveland has many attractions as a city, but the two things for which it is best known, in relation to water pollution, are that it has a river that burned, twice, the Cuyahoga River; and that it is nestled on the shores of a dead lake, Erie.

Case Western Reserve University is the major private university in Cleveland. Included on its faculty are many scientists who are concerned about reversing the condition of this lake and river. With the increased interest in environmental problems which manifested itself in the sixties and has grown exponentially since, these professors were able to institute courses and programs for an increasingly interested student body. This situation was duplicated at other colleges in Cleveland.

So Cleveland had, at the beginning of the seventies, two major ingredients for the research and study of water pollution. It had the problems of water pollution at its doorstep, a laboratory for study, one of the most polluted lakes and one of the most polluted rivers in the country. It had the scientists to provide leadership and guidance, and the students to do the actual work. What was lacking was organized access to the research materials needed to back up the projects and courses.

Lake Erie Project

At the end of 1970, the United States Environmental Protection Agency funded

a comprehensive research project on the aging of Lake Erie. The research project was to be carried out by a consortium consisting of three major universities in Cleveland, along with the Lewis Research Laboratory of the National Aeronautics and Space Administration, which is located in Cleveland, and the City of Cleveland itself.

A local foundation awarded funds to Case Western Reserve University for library support of this project. As a result of this funding, a collection was built to support the research needs of the project and to provide the literature needed by the researchers.

Environmental Literature

Three factors make environmental literature a difficult subject area. The first is that environmental science is a new field. Its boundaries are not yet clearly defined. It was only nine years ago that the heading "Man—Influence on Nature" appeared in the *Reader's Guide (1).* Before that, the emphasis had been on the influence of the environment on man. It was not until December 1970 that the United States Environmental Protection Agency was established in order to centralize the major federal pollution control programs which were formerly scattered in different departments of the government.

Scattering is a problem with the literature also. There are no comprehensive bibliographies of books, periodicals, reports, microforms, or audiovisual materials. There are numerous partial bibliographies which must be located one by one. The need for coordination and cooperation in literature identification and exchange was one of the concerns of the United Nations' First Conference on the Human Environment, held in Stockholm in June 1972; and one of the concerns of the United States Environmental Protection Agency's First National Environmental Information Symposium, held in Cincinnati in September 1972. The "first" in the titles of both conferences also points up the recent initiation of concern for the environment.

A second factor, which makes environmental literature difficult, is that the field is broadly interdisciplinary. Project groups in this area include biologists, geologists, geophysicists, chemists, and engineers. To back up the information requests of such a diverse group requires the availability of the major information sources in each separate subject area. This is true for students in the new environmental sciences departments and divisions, as well as the burgeoning citizen action groups. The nature of the environmental sciences field is broad, and cuts across traditional disciplines, requiring a reorganization of the fields of information at least in the librarian's mind, and preferably, in the more permanent form of catalogs, indexes, bibliographies and cross references.

The third factor which makes environmental literature difficult is the rapid growth of the field which results from the rapid growth of interest in this area by the public and the government. A survey of entries in the *Congressional Record* for a several-month period in 1969 showed the environment to be second only to Viet Nam in number of occurrences *(2).* Public interest burgeoned in the sixties. *Ulrich's Periodicals Directory* caught up with this stream of interest by using, for the first time in the 1967–1968 edition *(3),* the combined heading "Air and Water Pollution" under which were listed thirteen periodicals. The 1971–1972 edition *(4)* listed 120 periodicals under the heading "Environmental Science." *Chemical Abstracts,* in its 5th Decennial Index covering the years 1947–1956 *(5),* listed, under the subject heading "Environment," three entries. The 8th Collective Index, covering 1967–1971 *(6),* listed over 300 entries under that heading.

The growing public interest and outcry helped focus government attention on the environmental area. Seventy-five government agencies publish reports in the environmental area. With government attention comes government funding, which is a tremendous aid to growth. The United States Environmental Protection Agency now funds, or par-

tially funds, 4,000 projects. This tremendous growth has resulted in a lag between the literature produced and used in the environmental sciences and the sources which would organize and coordinate it; thus such information is difficult to locate.

Defining Goals of Collection

The first step in building the collection was to define, as specifically as possible, the purposes of the collection. University Libraries at Case Western Reserve University wanted to concentrate on covering the entire field of water pollution in its scientific and technical aspects—on gathering academic material of general interest on appropriate levels for the undergraduate, graduate student, and faculty; on backing up the courses which the university offers; on including local material; and on covering historical as well as recent developments.

Once goals had been defined, criteria for judging the usefulness of a particular item were available.

Mining the Library Collection

The next step was to look at what was already in the university libraries. Most of the environmental material was located in the science and technology library. The following step was to examine what was already in the science library collection.

Since the Collection Development Department had been buying as heavily as our budget would allow in the environmental area for the previous two years, a good basic collection existed. We decided to leave the books and periodicals in the general collection because there was good subject access to them there, and the library is physically compact enough to be easy to use in conjunction with the special collection.

Reports were another matter. These were located in the government documents collection in the humanities library across campus. Those reports specifically related to water pollution were moved to a new location near the books and periodicals on this subject, and form the nucleus of the new collection. This report collection is classified by the government classification number, as are all of Case University libraries' government documents. It is shelved next to the nongovernmental technical reports which were already in the science library collection. For both of these collections, a main entry card was made. Title cards will be produced as time allows. Subject access to the U.S. Government Publications is through the *Monthly Catalog of U.S. Government Publications (7).* Subject access to the nongovernmental reports is through the indexes which include this type of material. This first step was pulling together the material already owned but scattered in separate locations.

Coordination with Other Libraries

The second step was to visit and examine the collections of the other libraries on campus, the libraries of the other universities involved in the project, and other local libraries containing material on water pollution. This served the purpose of permitting the delimitation of areas of concern for each library, to avoid duplication of resources.

This last was quite clear cut. Each campus library had its area of specialization. The law library covered legal aspects; the health sciences library, biological aspects; and the humanities library, the social aspects. Our area was science and technology. The other major local collection was at the Cleveland Public Library, which concentrated on more popular types of material, and, in its Municipal Reference Library, on local government activities. There is little overlap since the specialties are clear cut and since the libraries inform each other of planned purchases.

A collection of lists of the holdings of these other libraries in the water pollution area was begun. Not all the libraries had such lists available. Catalog cards will be made for the items on those lists which were available, with a notation of their location. These cards, when inter-

filed, will be the beginning of an area union catalog of resources on water pollution.

For those libraries which cannot provide lists of their holdings, the plan is to duplicate catalog cards from selected areas of their subject catalogs and add these to the union catalog.

Scanning Current Literature

Another way to gain background knowledge and familiarity with the field was to scan current issues of periodicals. This was begun on a regular basis. It allowed the ordering of new publications which were relevant to the collection and which were announced in current issues of periodicals.

It also provided information about data services on a regional or national scale which provided searches of available literature.

The best example of these, most specifically related to water resources, is the Water Resources Scientific Information Center *(8)* of the U.S. Office of Water Resources Research. Data on water resources are collected in regional centers which will conduct searches and send a printout of reports relevant to the subjects requested. The regional office for Ohio is located at Cornell University.

The *Environment Reporter (9)* conducts custom computer searches on particular subjects which result in a listing of research in progress, and a list of all U.S. Government reports on the subject requested.

The main method of building the collection was to check lists of recommended sources to see if the items were in the collection and to consider ordering them if they were not. These lists are in the current library literature and in the water pollution journals and abstracts on occasion. They are not found in the reference section of the library, but rather in the periodical literature because of the newness of the field. Publishers' announcements were collected and their lists were checked as well. Requests received were ordered in an effort to encourage more.

Literature Searching

Half of the project work involved the development of a collection. The other half of the project was to be the library arm of an inter-disciplinary, inter-institutional project studying the pollution of Lake Erie. It was to provide researchers with the personalized services usually found in special libraries.

The major service provided was literature searching. This is, after all, our area of expertise. Searching for literature on water pollution for project members was the same as in any other technical area. Emphasis was on current information which was mainly found in journals and reports. We used the computerized searches available nationally and regionally, particularly those provided by the Water Resources Scientific Information Center at Cornell University and the National Technical Information Service *(10)*. To this was joined individual searching through the abstracts, most often *Pollution Abstracts* and *Eutrophication Abstracts*.

In addition, part of the service provided was assistance in searching the literature in support of developing new proposals for educational and research programs on water pollution. Grants are important to any university. There are funds available for water pollution research. Proposal writing is an important part of gaining this aid and needs to be supported by data.

The services needed by the proposal-writers are exactly those required by the researcher, since proposal writing is the formulating of research. A literature search is usually essential, either computerized or through indexes. A search for research in progress through the Smithsonian Scientific Information Exchange is basic.

The writing of the proposal may require specific items of information which the librarian can locate. Again at a later stage, when the proposal is being considered, specific items of information or further literature searching may be required to elucidate sections of the proposal.

Selective Dissemination of Information

An extension of literature searching was notifying the project members by memorandum of publications which might interest them. This constituted a personalized S.D.I. service for the project members. It was an outgrowth of the scanning of current issues of journals, mentioned earlier in relation to collection development.

Once literature was identified and requested, the next service provided was acquisition, either by purchase or interlibrary loan. This was not difficult with journal articles but could be time-consuming when it came to locating reports. Reports are not indexed in a single source nor are some indexed at all, since they go through no standard publication or distribution process but can be produced by any organization at will and distributed as the producer decides. U.S. Government reports can be located in the *Monthly Catalog (7)* or the *Government Reports Announcement (11).* Local government reports may be listed in *Public Affairs Information Service (12).* The rest, if they are not picked up in the subject indexes, may require a letter to the issuing agency for information on their location.

Agency File

As an aid to finding reports and other kinds of information, a file of agencies concerned with water pollution was begun. New organizations are constantly being formed, and locating these and their publications can be a problem. This file has proved invaluable, particularly with local organizations which can often provide information which has not appeared in print and can assist in locating local data which are not indexed or referred to in print.

These lists were collected from the periodicals scanned. The *Environment Reporter* list was added. Publications of the Sierra Club list organizations in the environmental area, also.

Requests were made to be put on the mailing lists of organizations such as the Sierra Club, the Izaac Walton League, and the U.S. Environmental Protection Agency to receive their publications, bibliographies, and library acquisitions lists. This provided another way of keeping informed of what was available and where.

Cutting Red Tape

Some time was spent working out the mechanics of the inter-institutional use of materials. All of the libraries were very cooperative. It was a matter of finding the best way to work within the differing regulations of each library without looking to the user like a solid wall of red tape.

Publicity

Once the collection was established, we got good publicity and were able to tap into the growing interest in water pollution projects on campus. Two other large, funded projects began to use our services, after reading articles about the collection in local newspapers. One is building a small scale model of a watershed on a university-owned farm and studying the effects of changes introduced. The second is examining phosphate pollution in Lake Erie.

The staff works closely with individual members of the first research team mentioned. With the second group, we were able to get in on the ground floor and attend their weekly project meetings. This provides the same kind of involvement as the initial project group and is a very satisfactory way of working.

The librarian's role in the research process is to provide a link between research and resources. The librarian studies the resources available and then finds out what the researcher is trying to do. This is best accomplished by studying the research proposal, by attending project meetings where progress is discussed, and by acquainting oneself with the specific task of each project member. The librarian can then bring knowledge of the location of material relevant to that task to the attention of the individual.

Conclusion

Library work is a constantly changing field. The collection just described reflects some of these changes. First, the subject matter of the collection, water pollution, is an area of recent concern. Libraries across the country are pulling together and building collections in the environmental sciences. Secondly, there is the close tie between the librarian and the research process. This is in keeping with the importance of involvement which is so emphasized on campuses today.

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sla news

SLA Election Returns

MIRIAM TEES has been elected to the office of President-Elect of the Association for 1974/75; and H. Robert Malinowsky, to Chairman-Elect of the Advisory Council. The two new directors, elected for 1974/77, are Joseph M. Dagnese and Constance Ford.

The 1974/75 Board of Directors held its first meeting in Toronto on Friday, June 14. Edythe Moore automatically succeeded Gilles Frappier as President, and Mr. Frappier will serve on the Board as Past President.

Roger M. Martin succeeds Mary McNierney Grant as Chairman of the Advisory Council. Anne C. Roess and Charles H. Stevens will serve the third year of their three-year terms (1972/75) as Directors. Robert L. Klassen and Marian G. Lechner will serve the second of their three-year terms (1973/76) as Directors. Janet M. Rigney will serve the second of her three-year term (1973/76) as Treasurer.

Report from Michigan

Michigan's graduate library schools, this academic year, have been graced by an onslaught of SLA recruitment efforts through the leadership of the Michigan Chapter president Elizabeth Moore. "Conversation '73" at the University of Michigan, "Job Opportunities Colloquium" at Western Michigan University, and "Library Job Workshop" at Wayne State University were designed to demonstrate to students both the advantage of special librarianship and an employment avenue which they might never have considered. Each program was organized by librarians or information specialists adjacent to the three schools. Each was slightly different in format and scope.

At the earlier fall prototype, "Library Job Workshop," graduate students were encouraged to talk informally with a few active SLA members. According to Hilary Wilson (General Motors Tax Library and Chapter Recruitment Committee chairman), the session included public, academic, and special library representatives who discussed developing job prospects, writing letters of application, and the résumé. Participants gave thumb-nail sketches of each of their libraries and described how each differed from the others. Clues about interviews and interviewing were also presented.

Western's colloquium combined aspects of the previous program. Five Kalamazoo SLA members agreed initially that their presentation to the students would include three parts: a fact sheet with biographical information about the participants; introduction to the topic including a summary of desirable courses, employment opportunities, and suggestions about job inquiries; an informal question and answer session comprised of student, faculty, and participating professionals.

Area professionals who participated in the colloquium were: Frank W. Allen (W.M.U.), Dr. Robert Ballard (School of Librarianship), Michael Buckner (W.M.U.), Janet L. Burk (W.M.U.), Jeanne L. Hartenstein (Bronson Methodist Hospital Libraries), Nancy Becker Johnson (Kalamazoo Public Library), Dr. Louis Kiraldi (W.M.U.), Elizabeth Moore (Burroughs Corporation Corporate Library), Valerie Noble (The Upjohn Company Business Library), Bertha Stauffenberg (Kalamazoo Institute of Arts), Laura Van Vlack (The Upjohn Company), Diane Worden (Kalamazoo Nature Center).

Diane Worden and Valerie Noble provided the introduction which was followed by adjournment to smaller discussion groups. Ms. Worden discussed curriculum requirements for special librarians.

Ms. Noble's presentation included several specific pointers about job inquiries. She told the students to be prepared to know

exactly what they want to work at, where they want to work, and why they want to work. She also emphasized the importance of job résumé preparation, conformance to an organization's employment department requirements, and personal contact. Students were urged to market themselves and their talents, and to demonstrate genuine interest during the job interview. Students were exhorted to get out and hustle and be willing to move anywhere in the country.

During the informal period which followed the main presentation, nearly half of the attending students expressed concern about background and experience and asked many thoughtful questions.

Reaction to the W.M.U. presentation was, not unexpectedly, mixed. Students criticized: "Don't like formal presentation of introductory material," "We want one-to-one meetings with the working librarians." (N.B.: Fewer students joined in the informal sessions than attended the formal lecture portion of the colloquium.) Mutual opinions suggest that the colloquium timing was bad. It should have been scheduled early in the academic year or during the spring term. (The special libraries course is regularly scheduled in spring.)

Advance colloquium information included: university newspaper, faculty bulletin, departmental posters and classroom announcement. In spite of pros and cons, a repeated request was voiced for the establishment of an SLA Student Group at the university.

The faculty were fairly optimistic about the session. Participant librarians' reactions varied. One remarked shortly afterward: "I had to carry the ball most of the time because they (the students) weren't particularly interested in inquiring about job openings, pay scales, or responsibilities." This professional's further impression was that "students would take anything as long as it was a job *even* if it were in a special library."

In summation, the likelihood that special libraries will be overwhelmed by enthusiastic hordes fresh out of library school seems far-fetched, if not impossible. However, recent observations indicate that a minority of Michigan students seem to be interested in the opportunity and potential.

Diane Worden
Valerie Noble

In Memoriam

Bill M. Woods (1924–1974)

Map librarian, professional leader and spokesman, association staff head, capable administrator, part-time educator, inveterate meeting attender and traveler, enthusiast for such diverse interests as yachting, genealogical research and things Welsh, dedicated family man and true professional friend—Bill Woods was all these things and more.

Most readers of this journal will be familiar with Bill Woods as SLA's third full-time Executive Secretary (later, Executive Director) from 1959 to 1967. As the review of this tenure in September 1967 issue of *Special Libraries* details, highlights were the doubling of pages in *Special Libraries,* doubling of conference exhibit space, inauguration of *News and Notes* insert to *SL, Scientific Meetings* and *Translations Register-Index*. Then there were activities by and for Council of National Library Associations (CNLA), USA Standards Institute Committee Z-39 on Library Work and Documentation, the National Association of Exhibit Managers, plus a steady stream of advisory committee and editorial board assignments.

The arena of Bill's operations expanded and shifted somewhat after important work for the National Planning Commission on Libraries and a precedent-setting management study of

WOODS

Engineering Index, Inc., under an NSF grant. The latter foresaw its transition from a printed base engineering information service into what is now a computer-based, computer-typeset spectrum of bibliographic data bases. Several SLAers connected with *Ei* in 1968 (Ralph Phelps, Carolyn Flanagan, and this writer) persuaded Bill to carry out his own plans by becoming *Ei's* Executive Director. Fortunately for it and for scientific/technological information services in general he was able to spend almost exactly five years in this capacity until the inroads of cancer made his resignation necessary on March 25, 1973.

During this period Bill became interested in and an official of such diverse groups as the National Federation of Abstracting and Indexing Services (NAFSIS), Information Industry Asso-

ciation (IIA), Association of Scientific Information Dissemination Centers (ASIDIC) and similar international groups. All this was punctuated with regular Washington trips in both roles as funds seeker and valued advisor to granting agencies.

Bill Woods was interested in management and early forged ties between SLA and the American Management Association. He was a most successful manager in the "benevolent despot" tradition. He spoke invariably of "my Board," "my Staff," and "my Members." His staff's loyalty was very high; also most decisions tended to be made at a high level.

In looking at his list of some 20 formal publications (including the important article on special librarianship in the *ALA Bulletin's* David Clift "Festschrift" issue of July 1972) plus many book reviews, there is a discernible thread of his first interest in special libraries—that of map librarianship. He always felt closest to that Division and prized receiving its first award.

Important to Bill was the strong support he received from the second librarian in his family, the former Janice Thumm and currently a new branch public librarian five miles from home on Long Island. Christmas letters always included tables on professional miles traveled, evenings away from Janice, and were co-signed by daughter Suzanne Everett and sons David and Steven. They shared Bill's joy in late April before his death on May 1, 1974, at hearing the advance text of SLA's Special Citation, to be covered in the August issue of this journal.

Bill Woods will be remembered in several organizations in our profession and others impinging on it, but it seems most appropriate that the SLA Citation was the last of which he was personally aware. SLA and Bill Woods shared in benefits from their association together as did the profession. Interment was in Red Oak, Iowa, May 4, 1974.

Eugene B. Jackson
SLA President, 1961/62

Sylvia M. Heyl, retired, formerly director of Moore College of Art Library . . . died Mar 14, 1974 at the age of 66. A past president of the Philadelphia Chapter. She had been a member of SLA since 1938.

Harold Richardson, editor of *The Texas List,* Houston, Texas . . . died Jan 19, 1974. He had been a member of the Texas Chapter, SLA for 22 years. He was engineering librarian, Columbia Gulf Transmission Company.

Miriam M. Landuyt, retired . . . died Oct 14, 1973. She was a member of the Metals/Materials Division. She was formerly research librarian of Caterpillar Tractor Company, Peoria, Ill.

Josephine B. Hollingsworth, retired, formerly assistant city librarian of Los Angeles and head of the Municipal Reference Library . . . died Oct 12, 1973. She was elected to the SLA Hall of Fame in 1959. An active member of SLA, she served as president of the Southern California Chapter from 1927 to 1928.

Janet Fogerty, librarian, Upjohn Company, Kalamazoo, Mich. . . . died Oct 3, 1973. She had been a member of SLA since 1958.

AUDIT REPORT
Jan 1, 1973-Dec 31, 1973

Board of Directors
Special Libraries Association, Inc.

We have examined the statement of assets, liabilities and fund balances of Special Libraries Association, Inc., at December 31, 1973, and the related statement of income, expenses and fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion the above mentioned financial statements present fairly the financial position of Special Libraries Association, Inc., at December 31, 1973, and its income, expenses and changes in fund balances for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

New York, N.Y.
March 26, 1974

J. K. LASSER & COMPANY

(Notes to Financial Statements on page 302.)

SPECIAL LIBRARIES ASSOCIATION, INC.
STATEMENT OF ASSETS, LIABILITIES AND FUND BALANCES FOR THE YEAR ENDED DECEMBER 31, 1973

	TOTAL	General Fund	Reserve Fund	Nonserial Publications Fund	Scholarship Fund	Equipment Reserve Fund	Research Grants-In-Aid Fund
ASSETS							
Cash (including $121,000 in savings accounts and $100,000 certificate of deposit)	$264,916	$197,890	$ 17,337	$12,213	$27,733	$9,743	
Marketable securities—at cost (approximate quoted market value $132,000)	109,131		86,379		22,752		
Accounts receivable—net of provision for doubtful accounts of $875 in General Fund and $200 in Nonserial Publications Fund	15,925	6,503		9,422			
Interfund receivable (payable)—net	—	(43,783)	17,548	14,296	589		$11,350
Inventory of nonserial publications and jewelry (Note 1)	45,721			45,419	302		
Prepaid expenses and deposits	12,296	12,296					
Furniture and fixtures—at cost—net of accumulated depreciation of $9,808 (Note 1)	4,911	4,911					
	$452,900	$177,817	$121,264	$81,350	$51,376	$9,743	$11,350
LIABILITIES							
Subscriptions, dues and fees received in advance (Note 1)	$162,970	$162,421			$ 549		
Accounts payable—trade	28,322	28,276		$ 46			
Withheld taxes and accrued expenses payable	3,335	3,335					
Income taxes payable (Notes 1 and 3)	2,300	2,300					
	196,927	196,332		46	549		
COMMITMENT AND CONTINGENCY (Note 3)							
FUND BALANCES	255,973	(18,515)	$121,264	81,304	50,827	$9,743	$11,350
	$452,900	$177,817	$121,264	$81,350	$51,376	$9,743	$11,350

(See accompanying notes to the financial statements.)

SPECIAL LIBRARIES ASSOCIATION, INC.
STATEMENT OF INCOME, EXPENSES AND FUND BALANCES FOR THE YEAR ENDED DECEMBER 31, 1973

	TOTAL	General Fund	Reserve Fund	Nonserial Publications Fund	Scholarship Fund	Equipment Reserve Fund	Research Grants-In-Aid Fund
INCOME							
Dues and fees	$245,682	$245,682					
Subscriptions and advertising	136,714	136,714					
Net receipts from conference less allocation below	44,689	43,760			$ 929		
Net receipts from education program less allocation below	3,656	3,656					
Interest, dividends and gains on sales of investments	27,615	11,256	$ 11,404	$ 511	3,893	$ 551	
Sale of nonserial publications	62,779			62,779			
Gifts	22,015	5,050			10,615		$ 6,350
National Science Foundation (Note 2)	20,399	20,399					
Miscellaneous	9,222	9,132			90		
Total income	572,771	475,649	11,404	63,290	15,527	551	6,350
COSTS AND EXPENSES							
Allotment of funds to subunits	38,475	38,475					
Salaries, wages and benefits	170,994	170,072			922		
Office services and occupancy costs	89,434	89,434					
Professional fees and services	16,823	16,823					
Travel and entertainment	13,894	13,894					
Member services and promotion	14,389	14,389					
Cost of periodical publications sold, including allocation below	174,073	174,073					
Scholarships	8,000				8,000		
Cost of nonserial publications sold	24,852			24,852			
Miscellaneous	6,870	6,566			304		
Depreciation	1,920	1,920					
Allocation of above expenses to—							
Cost of periodical publications	(30,763)	(30,763)					
Conference	(5,069)	(5,069)					
Other funds	(5,069)	(10,558)		5,210	279		
Total costs and expenses	518,823	479,256		30,062	9,505		
EXCESS OF INCOME OVER EXPENSES (EXPENSES OVER INCOME) BEFORE INCOME TAXES	53,948	(3,607)	11,404	33,228	6,022	551	6,350
Provision for income taxes	2,300	2,300					
EXCESS OF INCOME OVER EXPENSES (EXPENSES OVER INCOME)	51,648	(5,907)	11,404	33,228	6,022	551	6,350
FUND BALANCES—BEGINNING OF YEAR	204,325	18,569	82,312	48,076	44,805	10,563	
Interfund transfers	—	(31,177)	27,548			(1,371)	5,000
FUND BALANCES—END OF YEAR	$255,973	($ 18,515)	$121,264	$81,304	$50,827	$ 9,743	$11,350

(See accompanying notes to the financial statements.)

Notes to the Financial Statements
December 31, 1973

1. Summary of Significant Accounting Policies

The accounting policies that affect the significant elements of the Association's financial statements are summarized below:

Operations: The Association encourages and promotes the utilization of knowledge through the collection, organization and dissemination of information. It is an association of individuals and organizations with educational, scientific and technical interests in library and information science and technology.

Inventory: Inventory of nonserial publications and jewelry is stated at the lower of average cost or market, which does not exceed net realizable value.

Furniture and fixtures: Depreciation of furniture and fixtures is provided on the straight-line basis at various rates calculated to extinguish the book values of the respective assets over their estimated useful lives. Additions to office equipment during 1973 totalled $1,371.

Dues, fees and subscriptions: Membership in the Association, except for paid-for-life membership, and subscriptions to periodicals published by the Association is based on a calendar year. Dues, fees and subscriptions are credited to income in the year to which the membership or subscription relates. Dues from paid-for-life memberships are credited to income in the year received.

Pensions: The Association has a contributory group annuity retirement program with an insurance company covering substantially all qualified employees. There is no unfunded past service cost to be paid by the Association as of December 31, 1973.

Income Taxes: The provision for income taxes is based on unrelated business income, which consists solely of net advertising income.

2. National Science Foundation

During 1973 the National Science Foundation projects were completed and the final reports were submitted and accepted. Approximately $37,200 was remitted to the Foundation and approximately $20,400 was remitted to the Association as additional income for expenses incurred to date.

3. Commitment and Contingency

The Association occupies offices under a lease which expires in 1977. The lease provides for minimum annual rentals of $21,000, plus certain taxes and maintenance costs.

The Internal Revenue Service has examined the Federal income tax returns of the Association through 1970.

Errata

These changes have been noted in the article by Joan Maier, "The Scientist Versus Machine Search Services: We Are the Missing Link." *Special Libraries* 65(no.4): 180–188 (Apr 1974). Page 185, second column, "712" should be "12." In Figure 5, page 185, "X's" should be opposite D2 and 6. On page 183, 1973 should read 1971.

IFLA/1974

The 40th Session of International Federation of Library Associations (IFLA) will be held Nov 16–23, 1974, at the Washington Hilton, Washington, D.C.

Although the announced date for receipt of registrations was Jul 1, 1974, it has been reported that registrations will be accepted until Sep 1.

SLA members who wish to attend the IFLA meeting and participate in section or committee meetings should contact the SLA Executive Director for registration forms.

Washington Letter (May 20, 1974)

Many legislative proposals of importance to the library community have been introduced in the 93d Congress and are still moving slowly through the legislative process. Prospects for enactment are reported below.

White House Conference on Library and Information Services

On May 22 the House Committee on Education and Labor reported favorably on Senate-passed S.J.Res.40 calling for a White House Conference on Library and Information Services to be held in 1976 (H.R. 93–1056). It is believed that the House will vote on the proposal early in June. The visibility which such a conference would give to the work of all types of libraries is of paramount importance at this time when funding of library programs has fared so badly and when attacks are being mounted against library efforts to employ technological advances to increase the efficiency of library operations.

Copyright

Passage of General Copyright Law Revision (S.1361) is considered dead for the current Congress. Attention is now turning to a "piecemeal" approach to revision. Representative Robert W. Kastenmeier (D.Wis.), Chairman of the House Judiciary Subcommittee on Patents, Trademarks, and Copyright, has introduced H.R. 13364 which would remove the expiration date on existing legislation on unauthorized duplication and piracy of sound recordings. This, in effect, makes protection under the present law permanent. Companion legislation is contemplated in the Senate and passage is anticipated without further hearings.

Consideration is also being given to introducing, as a separate piece of legislation, Title II of the pending proposal, S.1361, which would create a National Commission on New Technological Uses of Copyrighted Works and require the commission to make recommendations on such difficult questions as library photocopying and cable TV.

Postal Rate Revision

The Subcommittee on Postal Service of the House Post Office and Civil Service Committee met on May 13 and unanimously approved for full committee action the Senate-passed S.411, which extends the time for phasing out postal rate increases. Book rate increases would be stretched out from the present 5-year period to 8 years, through 1979, and the library rate would be phased out over 16 years rather than 10 years under the current law. Enactment is expected.

ESEA Extension and Amendment

After extensive debate, the Elementary and Secondary Education Act (H.R. 69) was amended and passed by the Senate on May 20. The bill now goes to conference for reconciliation of differences. As passed by the Senate, the bill, among many other complex provisions, gives statutory authority for the Bureau of Libraries and Learning Resources in the U.S. Office of Education and establishes a new National Center for Education Statistics.

Freedom of Information Act

On March 14, by a record vote of 383 to 8, the House passed H.R. 12471, a bill to amend the Freedom of Information Act. As passed by the House, the bill stiffens administration of the Act and is responsive to complaints that the federal bureaucracy has in effect negated the purposes of the Act by "footdragging." (H.R. 93–876) In closing

hearings before the Subcommittee, representatives of the Information Industry Association testified on the need for "positive steps to make known to the public what information they (the government agencies) have available, to make it easily accessible—and to give the private sector a role in this activity.

A companion bill, S.2543, was favorably reported to the full Senate Judiciary Committee on May 16. The Chairman of the Senate Judiciary Committee has indicated his full support for the measure which encourages the belief that it will be passed expeditiously. One of the provisions of the bill requires all federal agencies to publish indexes of their publications and make them available to the public.

Ruth Fine
Washington, D.C.

STAFF DEVELOPMENT

The effectiveness and efficiency of the library and its personnel, always important, become even more important in these days of ever-increasing technological changes, innovative management practices, budget trims and the demand for accountability. Successful staff development efforts are one of the best ways to improve the effectiveness of the human resources in the library.

One group interested in staff development has evolved a plan "to stimulate interest of librarians in the area of staff development and to indicate available sources of helpful information on that subject."

Presently, their effort is to provide annotations of the non-library periodical literature on the topic of staff development and continuing education—print and non-print materials from 1974 non-library literature. A regular column was selected as the best means to make such information visible, up-to-date and accessible.

The group consists of members of the Staff Development Committee of the Library Administration Division of the American Library Association. We hope to increase the number of librarians interested in staff development and to broaden the awareness of non-library resources in this field.

We welcome others who might wish to give added purpose to their reading by the discipline of regular perusal of self-assigned journals and by writing useful annotations for colleagues. We would also appreciate suggestions and comments directed to *Special Libraries* so that we may respond to them in future columns.

One important aspect of this column should not be overlooked. This effort of an ALA committee to work within an SLA publication reveals that common concerns and interorganizational cooperation can exist when mutual efforts are made in good faith.

• •

In a period of organizational change, the importance of the behavior of individuals within the organization cannot be overlooked. These sources detail various aspects of organizational development and raise implications for staff development efforts for libraries which try to cope with the world of change.

U'ren, Chip / How Employee Oriented Firms Meet the Future. *Administrative Management* 35 (no.2): 51–54 (Feb 1974).

The author explores the characteristics of employee-oriented firms. People in such firms know what is expected of them, have opportunities to develop their potential, have access to all information affecting them, are free to express views and are committed to the company purpose.

Caruth, Donald L. / Basic Psychology for a Systems Change. *Journal of Systems Management* 25 (no.2): 10–13 (Feb 1974).

While many people resist change in their jobs, the majority will accept it if they are allowed to participate in developing the change, if the administration communicates with them and if they are taught to see change as a way of life.

Sampson, Howard L. / Model for Participation. *Journal of Systems Management* 25 (no.1): 30–34 (Jan 1974).

A study of systems management theory shows the effectiveness of this approach to change and determines how the degree of involvement by participants affected it. The author concludes that the systems management model helps overcome resistance to change by encouraging administrators to participate in the change from the beginning.

Alpander, Guvene G. / Planning Management Training Programs for Organizational Development. *Personnel Journal* 53: 15–26 (Jan 1974).

This investigation of managers' attitudes concerning centralization in general as well as the manager's functions, effectiveness and managerial style draws three conclusions: 1) managerial training should be reinforced; 2) all levels can benefit from an educational experience that will change their concept of centralization, and 3) middle management is not involved enough in organizational decisions.

Perhaps the most crucial place for staff development is at the middle management level.

Reddin, W. J. / How to Be a More Effective Manager. *Administrative Management* 35 (no.1): 47–50 (Jan 1974).

Asking basic questions, this self-help guide to bettering yourself as a manager discusses effectiveness standards, objectives, efficiency, delegation, change, etc. The need for current reading is stressed. "In improving his subordinates' effectiveness, a manager also upgrades his own."

Hammond, John S. / The Roles of the Manager and Management Scientist in Successful Implementation. *Sloan Management Review* 15: 1–24 (Winter 1974).

This article "explores ways in which a manager, faced with a one-shot decision problem, can derive more benefit from the application of management science to his problem." Thus, any librarian who wants to learn more about how management science really fits into real life decision-making will profit from this article.

Details about specific training areas can be helpful to libraries which have already identified their needs as orientation, communication or transactional analysis.

LaMotte, Thomas / Making Employee Orientation Work. *Personnel Journal* 53 (no.1): 35–37 (Jan 1974).

Strong emphasis is placed here on the benefits to the employee and to the organization, of an orientation program. Such a program can ease the employee's uncertainty and anxieties about a new job and can create a favorable attitude toward the organization. It can also provide opportunities for helpful feedback and can help avoid factors which generate employee turnover.

Shusta, George / Don't Make It Fancy . . . Just Good. *Training and Development Journal* 28 (no.4): 10–14 (Apr 1974).

In response to its need for effective written communication, one organization planned six, two-hour sessions which include the important characteristics for such a program. It is basic, simple, brief and had a built-in evaluation. Most important, the evidence shows that it has achieved lasting results.

Albano, Charles / Transactional Analysis on the Job. *Supervisory Management* 19:2–13 (Jan 1974); 19:12–27 (Feb 1974); 19:14–20 (Mar 1974).

This three-part series is a good place to start or continue one's reading on the subject of transactional analysis as it relates to the work environment. It is designed to "get across TA concepts that have management applications, illustrate those concepts by presenting and analyzing on-the-job transactions and link TA concepts to other behavioral concepts with which managers may already be familiar."

Barbara Conroy
Tabernash, Colo.

COMING EVENTS

Aug 4–24. Information Retrieval and Information Retrieval Systems, training course seminar . . . at Center of Technology Development, Katowice, Poland. Sponsored by Unesco in collaboration with the Ministry of Science, Technology and Higher Education of Poland. Program entirely in English. Write: Unesco, 7 Place de Fontenoy, 75700 Paris, France.

Aug 21–24. Management Institute . . . in Vail, Colo. Sponsor: Medical Library Association. Contact Division of Education, Medical Library Association, 919 N. Michigan Ave., Chicago, Ill. 60611.

Sep 5–15. International Federation for Documentation, 37th Conference . . . in West Berlin. Subject: Information Systems Design for Socio-economic Development. Write: Judith A. Werdel, USNCFID, 2101 Constitution Avenue, Washington, D.C.

Sep 9–10. Utilization of Computer Based Services, seminar . . . at DuPont Plaza Hotel, Washington, D.C. Credits to National Federation of Abstracting and Indexing Services and the College of Library and Information Services, University of Maryland. For information: NFAIS, 3401 Market St., Philadelphia, Pa. 19104.

Sep 9–12. INFO'74 . . . at the Americana Hotel, New York City. Sponsor: American Management Association. Theme: Effective Information Management. Write: Clapp & Poliak, Inc., 245 Park Ave., New York, N.Y. 10017.

Sep 10–12. Military Librarians' Workshop . . . at Ft. Huachuca, Arizona. Theme: Interpersonal Communication. Contact: Edith J. Fraser, HQ Fort Huachuca, Technical Reference Division, Ft. Huachuca, Ariz. 85613.

Sep 13–14. New England Regional Group/MLA Meeting . . . at the University of Connecticut Health Center, Farmington, Conn.

Sep 16–19. FID International Congress on Information Systems Design for Socio-economic Development . . . in West Berlin. Topics: Responses of existing systems to current and future information needs, information and the quality of life, plus others. Contact: FID Secretariat, 7 Hofweg, The Hague, Netherlands.

Sep 18. New Approaches in Reference Services, workshop . . . at the School of Library Science, University of Iowa. Write: Ethel Bloesch, School of Library Science, 3087 Library, Iowa City, Iowa 52242.

Sep 23–27. Intergovernmental Conference on the Planning of National Overall Documentation Library and Archives Infrastructures . . . Paris. Contact: Department of Documentation, Libraries and Archives, Unesco, 7 Place de Fontenoy, 75700 Paris, France.

Sep 22–25. Aslib 48th Annual Conference . . . in Cambridge, England.

Sep 29–30. Mental Health Librarians, meeting . . . in Denver, Colo. Information available from Dr. Henry Work, American Psychiatric Association, 1700 18th St., N.W., Washington, D.C. 20009.

Oct 3–5. SLA Board of Directors . . . at Gramercy Park Hotel, New York.

Oct 3–5. Southern Regional Group/MLA . . . in Atlanta, Ga. Two continuing education courses will be offered: General Biomedical Reference Tools and Grant Applications and Management. Write: Mary Alice Mills, Department of Health, Education and Welfare, Public Health Service, Center for Disease Control, Atlanta, Ga. 30333.

Oct 7–10. Sixth International Micrographic Congress . . . in Sao Paulo, Brazil. Sponsor: Brazilian Microfilm Association. Write: Gustav Bujkovsky, IMC, P. O. Box 484, Del Mar, Calif. 92014.

Oct 13–17. 37th Annual Meeting ASIS . . . in Atlanta, Ga. For information: Dr. Vladimir Slamecka, School of Information and Computer Science, Georgia Institute of Technology, Atlanta, Ga.

Oct 15. Nonprint Media Institute . . . in Galveston, Texas. Sponsor: Southwestern Library Association. For information: Ann Adams, Houston Public Library, 500 McKinney, Houston, Texas 77002.

Oct 20–23. 19th Annual Conference of the American Records Management Association . . . in Washington Plaza Hotel, Seattle, Wash.

Oct 23–25. Illinois Library Association Annual Conference . . . in Springfield, Ill. Topic: The Compleat Library—Real or Imagined? Write: Sella Morrison, Lincoln Library, 326 So. Seventh St., Springfield, Ill. 62701.

Oct 27–29. Drug Information Association, symposium . . . at Hilton Inn 1776, Williamsburg, Va. Topic: Unusual and Underutilized Drug Information Resources. Contact: Dr. Salter, VADICS Center, Virginia Commonwealth University, Medical College of Virginia, Richmond, Va. 23298.

Oct 28–31. Instrument Society of America International Conference . . . Sheraton Hotel, New York City. Two concurrent symposia: Data Handling and Computation and Joint Environmental Instrumentation and Control. Write: ISA/74 Conference, Instrument Society of America, 400 Stanwix St., Pittsburgh, Pa. 15222.

Nov 10–13. 20th Annual Allerton Library Institute . . . at Allerton House near Urbana, Ill. Sponsor: University of Illinois Graduate School of Library Science and the Illinois State Library. Topic: Collective Bargaining in Libraries. Write: Brandt W. Pryor, University of Illinois Office of Continuing Education and Public Service, 116 Illini Hall, Champaign, Ill. 61820.

Nov 14–16. Virginia Library Association Annual Conference . . . in Hot Springs, Va. Write: Sylvia E. Dawson, Charles Pinckney

Jones Memorial Library, 406 W. Riverside St., Covington, Va. 24426.

Nov 19–22. Reprographics International Exhibition . . . in Basel, Switzerland. Contact: Brian Mack, Mack-Brooks Exhibitions, Ltd., 62–64 Victoria St., St. Albans, Herts. All 3XT, England.

Future Meetings

1975

Jan 16–18. SLA Winter Meeting . . . at St. Petersburg Hilton, St. Petersburg, Fla.

Jan 19–25. ALA Midwinter Meeting . . . at San Francisco Hilton and Sheraton Palace, San Francisco, Calif.

Mar 31–Apr 4. Catholic Library Association . . . in St. Louis, Mo.

Jun 2–7. Medical Library Association, 74th Annual Meeting . . . at the Statler Hilton, Cleveland.

Jun 8–12. SLA, 66th Annual Conference . . . at Palmer House, Chicago, Ill.

Jun 29–Jul 5. ALA . . . in San Francisco.

Jul 2–7. American Association of Law Libraries . . . at Century Plaza Hotel, Los Angeles, Calif.

Oct 2–4. SLA Board of Directors . . . at the Gramercy Park Hotel, New York.

Nov 2–6. ASIS, 38th Annual Meeting . . . in Boston.

1976

Jan 18–24. ALA Midwinter Meeting . . . in Chicago.

Jun 6–10. SLA, 67th Annual Conference . . . at Brown Palace and Currigan Convention Center, Denver, Colo.

Jun 13–18. Medical Library Association, 75th Annual Meeting . . . in Minneapolis, Minn.

Jun 20–26. ALA . . . in Atlantic City.

Jun 27–Jul 1. American Association of Law Libraries . . . at Sheraton Boston Hotel, Boston, Mass.

Oct 31–Nov 4. ASIS, 39th Annual Meeting . . . at the San Francisco Hilton.

1977

Jan 30–Feb 5. ALA Midwinter Meeting . . . at Shoreham and Sheraton Park Hotels, Washington, D.C.

Jun 5–9. SLA, 68th Annual Conference . . . at New York Hilton, N.Y.

Jun 12–16. Medical Library Association, 76th Annual Meeting . . . at the Washington Plaza, Seattle, Wash.

Jun 19–25. ALA . . . in Detroit.

Jun 26–30. American Association of Law Libraries . . . at Four Seasons-Sheraton Hotel, Toronto, Ont.

1978

Jan 22–28. ALA Midwinter Meeting . . . in Chicago.

Jun 4–8. SLA 69th Annual Conference . . . in Atlanta.

Jun 25–Jul 1. ALA . . . in Chicago.

REVIEWS

Foreign Language Index, 1968- . New York, Public Affairs Information Service, 1972- v.1 (1968-1971)- . Quarterly (cumulating to annual). $100 per annum.

Public Affairs Information Service has a long and distinguished history, and its *Bulletin* constitutes an invaluable key to much significant material published during the past sixty years. The introduction of a companion and similar service covering publications on public and economic affairs in French, German, Italian, Portuguese and Spanish is therefore certain to be of special interest to libraries of all kinds, and particularly to those that serve the interests of scholars and research workers. That it could fill a rather serious gap in information resources was scarcely in doubt and, while there were some critics who felt that an extension of the coverage and contents of the *Bulletin* itself would be the most satisfactory way of dealing with the problem, the Trustees of PAIS eventually decided on the issue of a separate service for foreign-language material—a decision that was fully justified since the alternative would have meant substantially increasing the cost of the *Bulletin* which, in a time of financial stringency, might have forced some libraries to have discontinued their subscriptions. It seems unlikely that many libraries that do not already subscribe to the *Bulletin* will buy the *Foreign Language Index,* but at least the range of choice here has been kept as wide as possible.

The material in the first volume of the *Index* is limited to articles in periodicals and contains indexing done from mid-1968 through 1971. Volume 2, and succeeding volumes, comprise a selective listing of current books, pamphlets, government documents, articles in periodicals, and other useful library materials (unpublished theses, yearbooks, conference proceedings, Festschriften, etc.). The selection of periodicals is admirable—the key reads like a selection of the best from Ulrich. Journals such as *Stern Magazin, ABC, Der Spiegel,* or *L'Express,* do not belong here; such titles as *Aussenwirtschaft* (Zurich), *Bulletin de l'Afrique noire* (Paris), *Ciencia e tecnica fiscal* (Lisbon), give some idea of the *Index's* level of treatment. Unexpectedly there are some English-language titles—such as *Asia Quarterly,* the *Canadian Journal of African Studies,* etc.—the policy being to restrict indexing to foreign-language contributions in those journals. An interesting feature is the inclusion of a number of leading banking journals since these often include informed articles on the fiscal and commercial situation in individual countries.

Owing to the language coverage, which the editors hope to extend later, the *Index* is notably strong on such countries as Austria, Belgium, France, Germany (in particular), Italy, Portugal, Spain, Switzerland, and Latin America —but the U.S.A. is also well represented. Of special interest to librarians are the entries under such headings as *Archives, Bibliography, Books, Information, Libraries,* etc. A special bonus is the substantial entry under *Directories* which constitutes a useful buying list of items which any library would wish to check with their own holdings since full details are given of many obscure (but worthy) items. The *Index* also lists much useful biographical material on public figures such as Chaban-Delmas, Banda, Kissinger, Mobutu, etc., and it is also helpful in tracing information on organizations such as the Conseil de l'Entente, the Group of Ten, the Nordic Council, the Common Afro-Malagasy Organisation, etc.

The individual entries are carefully designed to give just the information that the user needs. Difficult titles of periodical articles are provided with an English translation, and the existence of English-language summaries is indicated. Annotations are brief but excellent; book prices are included wherever possible, and one of the two indexes—the other lists authors—gives full addresses for publishers. "Hidden" bibliographies are given entries of their own, and special issues (devoted to a single subject or group of subjects) of periodicals are also indicated.

The indexing is excellent and stands head-and-shoulders above the average indexing done for libraries. Nevertheless, there are weaknesses. For example, there is no reference from *Hijacking* to *Air Transport—crimes,* though there is one from *Crimes aboard Airplanes.* There is no reference from *Offshore Oil Drilling* to *Petroleum Industry—prospecting;* and *Container Cargo Systems* are entered under *Unitized Cargo Systems.* Looking under *Recycling,* the reader is referred to *Salvage (waste, etc.);* if he looks up *Moonlighting,* he must proceed to *Employment, Extra.* It is surprising to be referred from *Deserts* to *Arid Regions,* or from *Drop-outs (School)* to *Student Withdrawals.* And why are there no references from either Vessels or Cargoes to the main heading: *Seizure of Vessels and Cargoes?*

But lest the examples just given appear to imply a somewhat stilted approach to the choice of keywords, it is reassuring to find full use of such headings as *Commuters; Wire Tapping; Wildcat Strikes; Spies, Industrial; Value Added Tax; Underdeveloped States; New Towns; Regional Planning; Drugs and Drug Addictions.* The reference *Wives* see also *Executives' Wives* is unintentionally amusing, but the German article listed under the latter claims that such a state is a profession in itself!

The *Index* is not particularly speedy in its coverage: volume 2, no.3 of 1972 did not appear until early this year. But the superb and scholarly treatment of this very exacting group of materials fully justifies the delays, such as they are, in handling it. The *Index* opens up a whole new dimension in current literature on

public affairs, and the editors are to be congratulated on carrying through to success so exacting and challenging an enterprise.

Robert Collison
Professor Emeritus
Graduate School of Library Service
University of California, Los Angeles

Case Studies in Library Computer Systems, by Richard P. Palmer. New York, Bowker, 1973. (Bowker Series in Problem-Centered Approaches to Librarianship) 214p. $10.95.

This book is an excellent addition to the literature on library automation. It probably is the first place you can read a case history of a library computer application which has been terminated and the reasons for the termination. There are enough case studies in this book to give the librarian, who is thinking about instituting some aspect of the library operation to automation, the problems and experiences of other librarians.

This book is one of five in the Bowker series. The other volumes the author has reviewed in this series have been designed for students. This book follows the case study method, but the cases given are complete in themselves.

This book defines twenty examples of automation; six for circulation systems, eight for serial systems, and six for acquisition systems. Each of the twenty systems seems to be unique. They each use different machines with several different programming languages.

Some of the systems are designed for special purposes. Each system is described by six sections: 1) environment, 2) objectives, 3) the computer, 4) the system, 5) costs, and 6) observations. None of the details of any program are given.

In each case, an attempt was made to determine costs. However, none of the costs are truly comparable. A quotation from the book states that "although unit costs have been given for each of the computer systems . . . they should not be compared without noting that they were not computed on a standard basis. Each library has a different way of determining how much of the personnel, equipment, and supply costs should be charged to the system." The author has made a noble attempt to try to arrive at standard costs but was unable to allocate expenses according to a standard method. One of the reasons for this can be traced to the operation of the computer in many instances by a non-library unit within the total organization.

I think this book is an excellent addition to the literature on library automation. It is not a how-to-do-it book on library automation, but it does provide many of the problems and pitfalls that can undermine good intentions and a competent staff. The experiences of the twenty cases are such that they should provide some insight into what is possible with machines. I can think of no other book which is as honest in its assessments or its descriptions about automated library operations.

The Universal Decimal Classification; The History, Present Status and Future Prospects of a Large General Classification Scheme, by A. C. Foskett. London, Clive Bingley, 1973. Distributed in the United States by Linnet Books, Hamden, Conn. $9.00. 171p.

Until I had read this book, I was unaware that UDC was in any difficulty. UDC does not have the same financial or intellectual support that Dewey and LC classification schemes have and UDC is kept up-to-date at the whim of volunteers.

Foskett is a proponent of UDC and sees a future for it "if the necessary steps are taken to ensure three things; revision of the schedules wherever appropriate, using modern classification theory; improvement of the management structure; adequate finance." That UDC has been able to survive in a rather bleak climate tends to suggest it will not soon disappear.

In my review of Foskett's earlier book *Subject Approach to Information (Sci-Tech News,* Spring 1972) I wrote: "When trying to relate the pre-coordinated subject headings to the hierarchical classification systems such as UDC and LC, I find myself out of sympathy with those who are emphasizing them. I find the use of classification schemes either in a catalog or a printed index difficult to use." My position has not changed over the last two years. However, there is a place for an international language. This can come either as a thesaurus or as a classification scheme. I am neutral as to how to achieve the metalanguage. I am not neutral about the classification schemes we have to work with now. The Dewey, UDC and LC schedules for science and technology leave me talking to myself.

I see little effort being expended in the U.S. to develop a new general classification scheme. Foskett describes the work of the British Classification Research Group which did some work on a new scheme. But where will support come for such a new scheme? It most certainly will not come from libraries already committed to Dewey, UDC or LC.

The problem of building a new general classification scheme is intriguing but has little support. UNISIST sponsored organizations might try to fill this gap. But with all the changes taking place in the world, the metalanguage we are seeking might just as well be produced as a thesaurus rather than in hierarchical codes. At present, UDC is the best bridge we have for this international language. Foskett is pleading for more support to maintain UDC in a form that will be current and useful.

Masse Bloomfield
Hughes Aircraft Corporation
Culver City, Calif. 90230

PUBS

(74–056) **Canadian Library Directory:** no.1, Federal Government Libraries. Ottawa, Natl. Libr. of Canada, 1974. Apply. Cat. No. SN3–31/1974

The first of a series of directories designed to include all types of Canadian libraries. Data include conditions of use, special services, description of the collection and subjects, number of staff, and hours. In French and English.

(74–057) **Information Retrieval On-Line.** Lancaster, F. W. and Fayen, E. G. Los Angeles, Melville, 1973. (Information Science Series) xiv,597p. $18.50 LC 73–9697 ISBN 0–471–51235–4 CIP

Oriented toward theory rather than hardware or programming aspects, this work deals with online systems for bibliographic search and retrieval.

(74–058) **Who's Who in Consulting:** A Reference Guide to Professional Personnel Engaged in Consultation for Business, Industry and Government, 2d ed. Wasserman, Paul, ed. Detroit, Gale, 1973. xvii,1011p. $45.00 LC 73–16373 ISBN 0–8103–0360–4 CIP

Companion to *Consultants and Consulting Organizations Directory* (Gale, 1973). Subject index of consultants by location and cross index of subjects.

(74–059) **International and Area Studies Librarianship:** Case Studies. Sable, Martin H. Metuchen, N.J., Scarecrow, 1973. 166p. $5.00 LC 73–5547 ISBN 0–8108–0647–9 CIP

The author provides 29 case studies from various regions of the world. The studies include reference service, cataloging, circulation, etc.

(74–060) **Oral History Program Manual.** Moss, William W. New York, Praeger, 1974. (Praeger Special Studies in U.S. Economic, Social and Political Issues) ix,109p. $13.50 LC 73–19446 ISBN 0–275–08370 CIP

A practical guide based on the concepts and experiences at the John F. Kennedy Library, Waltham, Mass.

(74–061) **Cable: Report to the President.** Cabinet Committee on Cable Communications, Washington, D. C., GPO, 1974. vii,122p. $1.50 LC F4–600004 GPO No. 4000–00304

Includes long-range policy recommendations.

(74–062) **Directory of Bay Area Libraries.** Mulligan, Georgia, ed. San Francisco, Bay Area Business Librarians, 1973. loose-leaf $15.00 (includes 1st suppl.). (Order: Loretta Denning, c/o Hayward Public Library, 22734 Mission Blvd., Hayward, Calif. 94541)

Lists 250 libraries in 13 counties in and around San Francisco. Includes data on size, strengths and accessibility of each library's collection. Subject index.

(74–063) **Published Library Catalogues:** An Introduction to Their Contents and Use. Collison, Robert. London, Mansell, 1973. viii,184p. $11.75 LC 72–95007 ISBN 0–7201–0369–X (U.S. Order: Bowker).

Description of 756 published catalogs of libraries in English speaking countries. Divided into 11 subject areas, includes bibliography, subject index, and ordering information.

(74–064) **How to Get What You Don't Have:** A Guide to Obtaining Loans, Photocopies or Microcopies of Sci-Tech Publications. Piternick, Anne. Ottawa, Natl. Res. Council of Canada, 1973. 53p. $2.00 (Order: Publ. Sect., Natl. Sci. Libr., Ottawa K1A 0S2)

(74–065) **News Bureaus in the U.S.** Weiner, Richard, ed. New York, Richard Weiner, Inc. (888 7th Ave.), 1974. 143p. $20.00

Arranged geographically by state.

(74–066) **Abstracts and Indexes in Science and Technology:** A Descriptive Guide. Owen, Dolores B. and Hanchey, Marguerite M. Metuchen, N.J., Scarecrow, 1974. xiv,154p. $6.00 LC 74–1345 ISBN 0–8108–0709–2 CIP

Information includes arrangement, coverage, and scope.

(74–067) **Literature and Bibliography of the Social Sciences.** Freides, Thelma. Los Angeles, Melville, 1973. xviii,284p. Apply LC 73–10111 ISBN 0–471–27790–8 CIP

HNZ

PLACEMENT

"Positions Open" and "Positions Wanted" ads are $1.50 per line; $4.50 minimum. Current members of SLA may place a "Positions Wanted" ad at a special rate of $1.00 per line; $3.00 minimum.

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Information Specialist and/or Research Librarian—"A-one" references and experiences in all phases of information dissemination, storage and retrieval. Will relocate. No agencies. Box E–213.

Science/Geology Librarian—MSLS, over 70 hrs math & sciences, 10 yrs prof experience in Govt., academic & all phases of special library work incl supervisory, aerospace, infor. retrieval, map work & training in computer programming. Résumé on request. Box E–214.

Ann Arbor Area—AMLS; MA Asian Studies; BA French & Pol. Sci.; 5 years experience as reference-serials-editorial librarian with *Mathematical Reviews*. S. Fedunok, 1120 Granger, Ann Arbor, Michigan 48104.

Librarian—desires spec. libr. pos. in N.Y.C. area, but will travel for right job. Med. & spec. libr. exp., MLS 1974; BA Spanish-Portuguese, 1971. Resume: Erica Horne, 7 E. Castle Ave., Spring Valley, N.Y. 10090.

San Francisco Area—Aug. MLS. BA with honors; Major Spanish (Fluent), Minor German, facility in Italian. One yr. pre-professional experience in academic library. Available late Aug. C. Lometti, 957 State St., Albany, N.Y.

POSITIONS OPEN

Assistant Engineering Librarian—Purdue University Libraries. Assist in operation and supervision of system of libraries now serving schools of engineering. These libraries are to be combined in new engineering research center, which is expected to open Fall 1976. Appointee will have opportunity to participate in planning for new facility and development of services. Qualifications: graduate library degree; supervisory ability; experience in engineering or technical library. Faculty status and rank; 22 working days annual vacation; group insurance, TIAA-CREF retirement plans in effect. Salary $9,000 or more depending on qualifications. Open August 1, 1974. Apply with resume to Ms. Katherine Markee, Personnel Librarian, Purdue University Libraries, West Lafayette, Indiana 47907. An Equal Opportunity Employer.

Reference Librarian—supervise small branch serving chemistry and physics departments. Involves reference service, collection development and operation of library. Help provide reference and bibliographic service in main library. MSLS from ALA accredited institution. Undergraduate major in chemistry or physics. Send resume to Box 24, Waterman Building, University of Vermont, Burlington, Vermont 05401. An affirmative action employer.

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New Position—Assistant Librarian: Varied responsibilities including periodicals and cataloging assistance. Expanding collection in ceramic engineering, science, and arts. 55,000 books, 1,500 subscriptions. Academic year. New facilities. Rural community in Southern Tier within range of Rochester, Buffalo, Syracuse. Equal opportunity employer. Apply: Director, Scholes Library, New York State College of Ceramics at Alfred University, Alfred, New York 14802.

Assistant Director—MLS, Advanced Subject Area degree or equivalent education and experience. Knowledge of library automation, methodology, techniques. Experience with personnel management, financial management, and long-range planning. $18,000+ dependent on experience. An equal opportunity employer. M/F. Apply to: R. Max Willocks, 100 Bird Library, Syracuse University, Syracuse, New York 13210.

Chemistry Librarian—Open June 1, 1974. BS in Chemistry, MLS, 1 year library experience. Responsibilities: Reference, Library Instruction, Collection Development. Supervise support staff. $10,000+ dependent on experience. Apply to: R. Max Willocks, 100 Bird Library, Syracuse University, Syracuse, New York 13210. An equal opportunity employer. M/F.

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Assistant Science and Technology Librarian—for reference and bibliographic service, collection development in chemistry and physics. MLS and master's degree in chemistry/physics. Basic 8-month appointment at minimum of $9,000 with 22% additional benefits. Apply to Director, Center of Educational Resources, Eastern Michigan University, Ypsilanti, Michigan 48197. An equal opportunity/affirmative action employer.

Engineering Librarian—To expand and direct services for 120 faculty, 527 graduate and 1,600 undergraduate students. Emphasis on cooperative development and utilization of computerized data bases. MLS and 3 years Engineering library experience. Salary open. Send resume to: Hal B. Schell, Dean of Library Administration, University of Cincinnati, Cincinnati, Ohio 45221. An Affirmative Action/Equal Opportunity Employer.

Health Sciences Cataloguer—required for 100,000 volume Canadian Library serving Medicine, Dentistry, Nursing, Pharmacy and Physiotherapy communities. Minimum qualifications: Accredited library school degree, two–three years scientific cataloguing experience, demonstrated ability to teach and supervise nonprofessional staff. Desirable qualifications: bioscience background, MLA certification, ability to participate in book selection, reference experience, foreign language facility. Salary from $10,600, faculty status, usual benefits. Apply to: Alan H. MacDonald, Health Sciences Librarian, W. K. Kellogg Health Sciences Library, Sir Charles Tupper Building, Halifax, Nova Scotia, Canada.

POSITIONS OPEN

Director of SALINET—Satellite Library Information Network—experiment in extending library services to sparsely populated areas via satellite. Assemble staff of 35. Applicants must possess admin. ability, working knowledge of libraries and telecommunications, ability to coalesce varied interests into unified program. Housed at U. Denver. Salary: Min. $25,000; 12-mo. contract; 2-year duration. The U. of Denver is an equal opportunity employer and welcomes applications from minorities and women. Contact Dr. Margaret Goggin, SALINET, Grad. Sch. of Librarianship, U. of Denver, Denver, Colo. 80210.

THE MARKET PLACE

Audio-Cassette Directory, a reference source of educational cassette programs in all fields: health sciences, management, sales, motivation, law, business, religion, many others. $5 prepaid, $6 if billed. Cassette Information Services, Box 17727–S, Los Angeles, CA 90057.

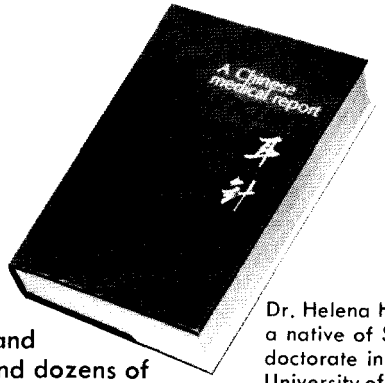
Back Issue Periodicals—Scientific, Technical, Medical and Liberal Arts. Please submit want lists and lists of materials for sale or exchange. Prompt replies assured. G. H. Arrow Co., 4th & Brown Sts., Philadelphia, Pa. 19123.

Foreign Books and Periodicals—Specialty: Irregular Serials. Albert J. Phiebig Inc., Box 352, White Plains, N.Y. 10602.

INDEX TO ADVERTISERS

EAR ACUPUNCTURE

After ten years' intensive experience, a Chinese medical team tells how it's done . . . why it works . . . how it has succeeded.



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EAR ACUPUNCTURE
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Translated by Helena L. Huang, Ph.D.
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Dr. Helena Huang, the translator, is a native of Shanghai. She earned her doctorate in microbiology at the University of Mississippi Medical School, and subsequently engaged in post-doctorate study for two years at the Harvard Medical School.

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