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## Special Libraries, December 1970

Special Libraries Association

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# *special libraries*

*December 1970, vol. 61, no. 10*

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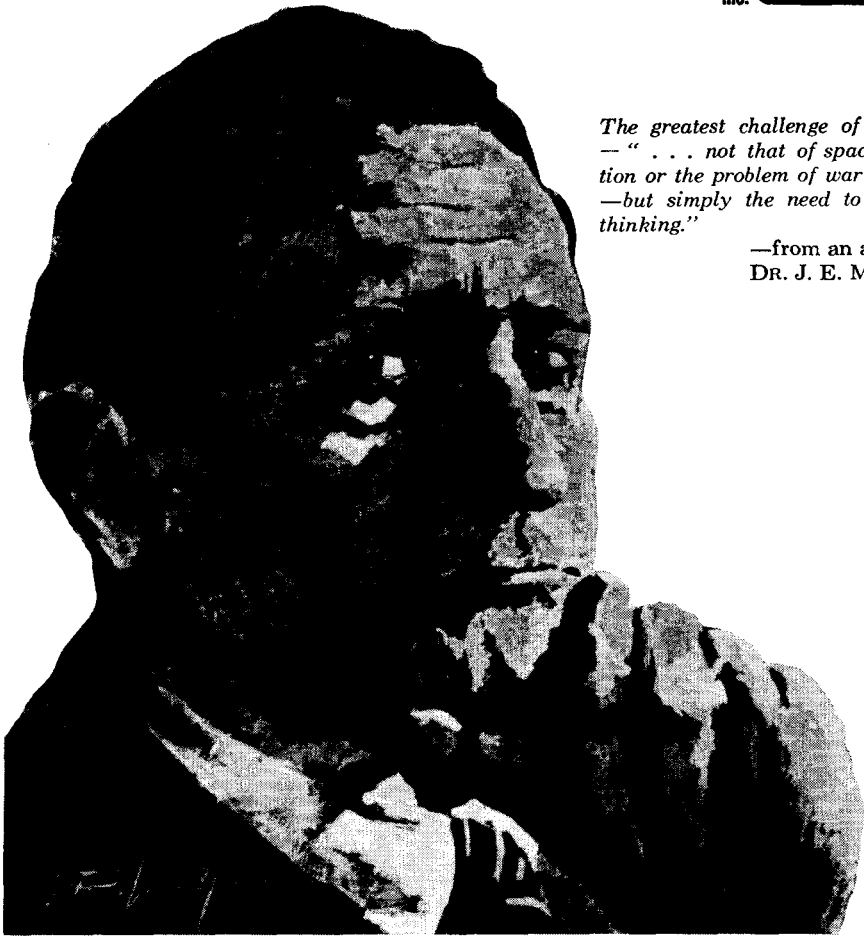
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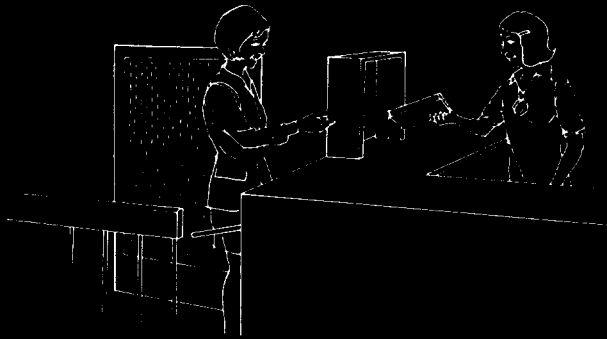
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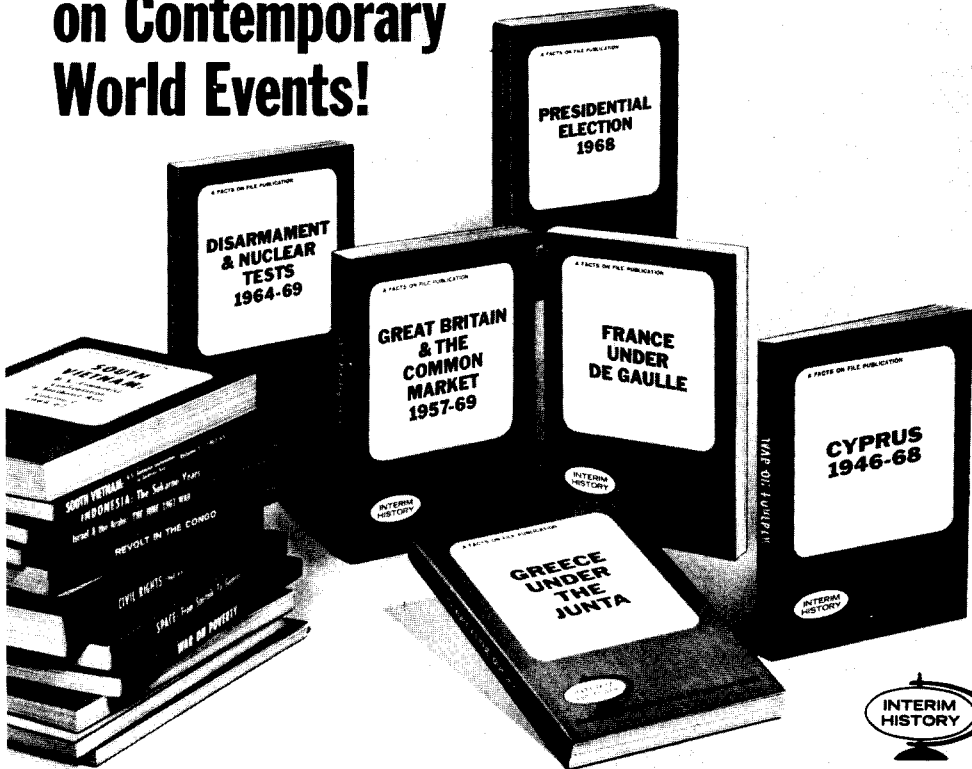
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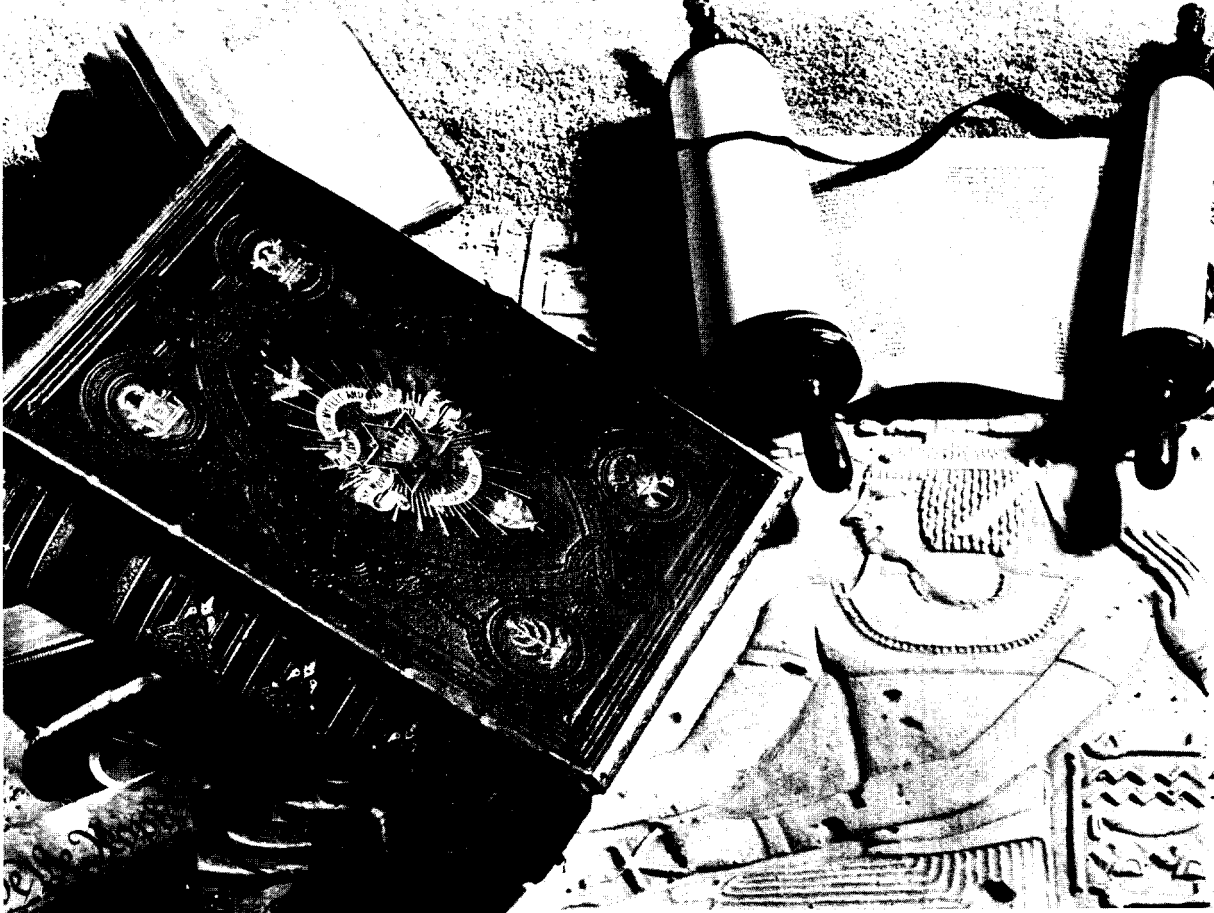
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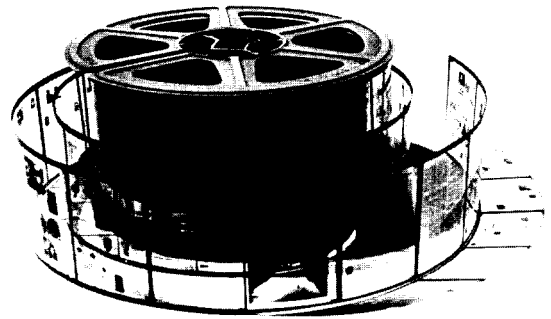
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## LETTERS

### *Divisions, Wake Up!*

In the Fall, 1970 issue of *Sci-Tech News* (vol. 24, no. 3), there appears a report by a Committee of the Petroleum Division titled "The Role of the Petroleum Division in SLA."

This is an important report which delineates penetratingly the relationship of SLA Divisions to SLA as a whole and presents creative solutions to annual meeting programming which continues to be poor or, at least, dismally erratic.

Has there been reaction to this report? Is anyone considering the recommendations?

E. H. Brenner  
American Petroleum Institute  
New York 10022

### *Irresponsible Publishing?*

With the title "Bibliography on Information Science and Technology" which is issued as part of the Information Technology Series, American Data Processing Inc. could have produced a top-notch item. Instead, this book with a copyright date of 1969 and a price of \$19.50 is merely a reprinting of four consecutive, unseparated alphabetical lists issued by the Clearinghouse for Federal Scientific and Technical Information on July 1, 1966; September 15, 1966; November 25, 1966; and January 16, 1967. These items, originally prepared under a National Science Foundation grant to American Documentation Institute and thence to System Development Corporation, and issued as AD 635 200, AD 640 572, AD 645 442, and AD 649 637, state very definitely that this continuing bibliography is intended primarily for the use of the authors of chapters in *Annual Review of Information Science and Technology*. The American Data Processing book gives no indication of this, but simply copies from the Preface of the original items, the information about the NSF grant and that SDC is providing general technical support, with Carlos Cuadra as editor.

It is true that the book includes "Abbreviations and Index for Periodicals Cited," but the lack of a subject index makes the work nearly useless for most people.

With the proliferation of information being published there is a constant need for

good, authoritative bibliographies and this could easily have been one of them. The basis is sound and impressive, but the unfortunate format, the lack of explanation for its preparation, and the absence of a subject index make this a negative contribution to the literature.

As a special librarian/information scientist, I cannot help but deplore what I consider to be irresponsible, opportunist publishing. I am certainly not objecting to the greatly improved printing which American Data Processing has given this, but I am sorry that they failed to add the relatively small amount of additional labor needed to turn out a really useful bibliography.

Marguerite C. Soroka  
Engineering Societies Library  
New York 10017

### *Association Scholarships*

I am concerned about the apparent intention of the SLA Board of Directors to phase SLA out of directly providing scholarships. I believe SLA should continue its current program of providing three scholarships annually for work toward a Master's degree in library science.

SLA originally had a loan program for needy students and members to help them complete their education. Then we added a scholarship program. Two years ago SLA dropped the loans due largely to a difficulty in screening, handling, and collecting the repayments. Now there appears to be a move to eliminate the scholarship program.

The Board has directed the Scholarship Committee to prepare a procedure by which the Library Schools in Canada and the United States would handle the SLA scholarships. Presumably they would advertise, screen, and select the award winners without the direct involvement of SLA or any of its Chapters or members. Since there are over 50 schools and only 3 awards at present, other problems are also presented, such as which schools get awards and when. The Library Schools have been contacted regarding this possibility. A few have replied—with mixed results. A few Chapters have discussed this directive and have opposed it. More discussion is needed by the Chapters.

I oppose SLA relinquishing control over these scholarships. The problems that have been encountered by the Scholarship Committee can be overcome to some extent: 1) By removing the requirement for the candi-

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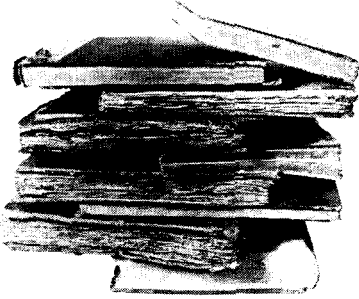
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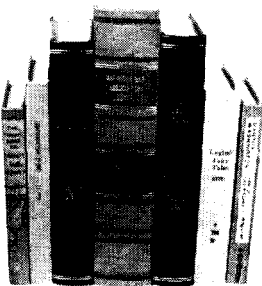


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dates being admitted to library school upon application (change to admittance granted in order to win which would delay that requirement until mid-May); 2) To require three out of four references rather than all references replying; and 3) To obtain better cooperation from the Chapter presidents in setting up Chapter interviews as soon as possible after receiving the notice from Headquarters and in selecting carefully, experienced librarians to handle the interviews. These Chapter interviews are very important and great weight is placed on them.

If there is no SLA Scholarship program then many Chapters will begin their own program, probably with local library schools. If this is what is desired then this alternative should be weighed also. Many different programs with differing standards and procedures would be established. The current quality of the program would be certain to suffer. Since there is sufficient money to continue the current SLA Scholarship program, we members of SLA must insist that it be continued. This subject should be discussed at our Chapter meetings so that the Chapter officers can communicate our decisions at the Mid-Winter Advisory Board meeting. Letters should be written to this year's chairman of the Scholarship Committee, Clement G. Vitek.

**Julian Larson**  
PPG Industries, Inc.  
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Light editing, for style and economy, is the rule rather than the exception, and we assume that any letter, unless otherwise stipulated, is free for publication in our monthly letters column.

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# The Special Librarian in the Modern World

Janice M. Ladendorf

North Star Research and Development Institute, Minneapolis, Minn. 55406

---

■ In today's information wealthy environment the need for effective information services is increasingly acute. The special librarian's role within his organization is discussed and some of the problems he faces in dealing with his library users are described. Unfortunately, libraries as they exist today are often frus-

trating to use and are avoided by most people. Individuals and organizations tend to resist innovation and information which could lead to it. Librarians have not yet faced up to the problems involved in designing and evaluating their libraries in user terms.

---

**I**N TODAY'S WORLD of explosively growing information and rapid technological change, there is an ever increasing need for effective information services. When an engineer finds his knowledge is obsolete five years after graduation and a man's job can disappear overnight, some form of continuing education ought to be an obvious necessity. Routine jobs which require little education and few skills are gradually disappearing; those jobs which require a high degree of education and creativity are rapidly increasing. To survive in these uncertain times, the modern organization is forced to innovate and relatively rapidly, simply to continue to exist. This type of never ending innovation is essentially based on the highly trained, creative people with a wide variety of skills and experiences. Today's administrators are increasingly faced with the problems involved in managing groups of diverse specialists, who speak different professional languages and often have a strong commitment outside of the organization to their own professional groups. These experts

not only expect the organization to present them with interesting problems to tackle, but they also expect to be provided with the necessary resources to solve them, including adequate library services.

It is precisely this socio-economic environment which has created the need for special libraries and information services that go beyond those provided by the conventional public or college library. Traditionally, libraries have seen themselves as the record keepers of civilization, in charge of preserving their scarce and valuable resources of knowledge for posterity. In more stable times, a delay period of 40-60 years in transferring knowledge between science and technology, which depended mainly upon the educational process for filtration between fields, was perfectly adequate. In today's fast moving world, such delay periods and leisurely absorption of knowledge are no longer acceptable. We are now living in an information wealthy environment, in which the race to locate, digest, and apply appropriate pieces of

knowledge is becoming faster and more strenuous all the time (1). Essentially the role of the special librarian is to aid his organization in exploiting these information resources as effectively as possible. Librarians who confine themselves only to the traditional library tasks of procuring and storing published material are not going to be resounding successes in this job. Direct service to users is the most crucial part of a special librarian's job; as you save them time and money in filling their informational needs so do you justify your existence. Conventional librarians merely guide their clients in using their library resources; special librarians generally utilize these resources extensively themselves for their clients. The concepts of literature searching, reference work, and selective dissemination of information as they have been developed by special librarians reflect this user service orientation and illustrate how much more they do for their clients.

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### Direct service to users is the most crucial part of a special librarian's job

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However crucial a special librarian's role may be, he is still going to encounter many problems in attempting to carry it out. The special library functions, or should be functioning, as one of the major adaptive units within the organization. An adaptive unit is one which is deeply concerned with the world outside of organizational boundaries; it studies this world to determine what changes may be necessary either within the organization or in the outside world in order to ensure the organization's continuing survival. Unfortunately, human beings, and the organizations to which they belong, strongly resist both the acceptance of innovation and any information which might create the necessity for it. This is especially true if the changes required within the organization are fundamental in nature; anyone attempting

to convey the necessity for such changes is usually perceived as a dangerous threat to security, safety, and order. Some examples of typical adaptive units are research and development, marketing research, advertising, corporate planning, etc. (2). The special library essentially serves as one of the legitimate points of entry into the organization for information concerning that messy, unpredictable, complicated outside world. However, due to human resistance to information and innovation, the special librarian will encounter many pitfalls, barriers, and hazards in his attempts to convey such information to the right people.

### User's Perception of the Librarian's Role

The basic problem which faces a special librarian in his attempts to function effectively is what to do about those obstinate non-users of the library. These are all those potential clients, by far the greatest majority, who ought to be using your services and facilities and who behave as though both you and your library do not exist. User studies have consistently shown that only a small percentage of their potential clients ever willingly use a library. As any successful special librarian knows, the process of converting a stubborn non-user into an enthusiastic user is almost invariably a difficult and delicate one, which cannot help but fail with some individuals. Once a potential user has been convinced that he can actually obtain useful and valuable information from the library, he becomes interested in an increasingly sophisticated range of services. Of course, before he can even be persuaded to try using the library, he must already believe that reading the appropriate literature can have a favorable effect on personal and organizational success.

One of the first barriers a special librarian comes up against in his attempts to entice potential users into his domain is the poor public images that libraries and librarians generally have had. Libraries are all too often regarded as nice things to have, but poor places to visit.

They can be a status symbol of a forward looking, research oriented organization and are somehow felt to be, in some vague and unknown fashion, conducive to effective research. In other words, libraries fall into the same category as a campus-like atmosphere typified by trees: they both may help keep your research staff happy, but serve no other useful function. Librarians have had an even worse image; they have been, and often still are, usually perceived as suspicious, unhelpful creatures whose main object in life is to protect their buildings and collections from the user. The first obstacle, then, in non-user persuasion is usually the necessity for changing his perception of the potential role which can be played by the special librarian in fulfilling his informational needs.

Modern application of such terms as information storage and retrieval systems, information facilities, information specialists, etc., to libraries and librarians has tended to obscure their true function. Libraries do not store information as such, they only store various kinds of documents which contain information. Furthermore, these documents may be either well or badly written and are always written for a group audience, not in terms of any one individual's particular needs and skills. The modern so-called information storage and retrieval systems are simply another index tool which can only retrieve references to various difficult-to-obtain documents, which may or may not be relevant to a particular topic. Before a user can extract information from a library, he must go through several frustrating and exhausting procedures. He has to struggle with various weird and peculiar indexes, locate materials which might help him in the obscure places where librarians put them,

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Libraries are all too often regarded as nice things to have, but poor places to visit.

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and cope with various hampering circulation rules. After he has succeeded in his battles with the library systems, he still has to read, analyze, and digest the literature he has so carefully won. Anything which can help to ease these steps for the user will increase greatly the likelihood of his coming to the library for help. Once he realizes that his special librarian is an expert in the job of locating appropriate documents and in dealing with the administrative procedures and indexing systems invented by other librarians, he will gladly relinquish to the librarian as many of his informational problems as he can.

### **Human Resistance to Innovation and Information**

Even if a potential user's concept of the possible cooperative roles of the library can be changed, his own personal need for knowledge will greatly affect the extent to which he finds information useful, desirable, or even necessary at all. Most people tend to avoid obtaining information for the same reasons they resist innovations. New knowledge, like innovation, is an upsetting thing, since it usually requires changing long-established, comfortable patterns of perception, conceptualization, and behavior. Input from the outside environment which could affect these patterns adversely is usually dealt with by a variety of defense mechanisms aimed at distorting or evading the disturbing evidence. Therefore, if an individual finds new knowledge or learning uncomfortable, he is going to want to avoid the library and the librarian.

Changing a potential user's role perception of the library, difficult though this may be, is still a relatively simple process compared to the problems involved in attempting to modify his basic attitudes which determine the degree to which he feels any need for knowledge at all. People are basically far less persuadable, manipulable, and exploitable and much more resistant to change than is generally believed. This basic resistance explains why adaptive units are



much more popular when they propose changing the outside world to fit their organization rather than changing their organization to fit the outside world. Much more is generally spent on advertising to convince people that they need the organization's products, rather than on marketing research to determine what products the organization should make for successful sales (3). Information which supports the status quo will be accepted readily; information which suggests the feasibility of changes is much more likely to be distorted or ignored.

Librarians are just as resistant to change as any other group. They, as a general rule, ignore both the library user's point of view and the need for adequate research on his expectations, values, and goals. Their emphasis is always on changing the user to fit the library—rarely on redesigning the library to fit the user. Such librarians plan and administer libraries by utilizing concepts of user attributes and needs as established in the library literature by librarians (4). These concepts are, of course, based on such adequate research methodology as guesswork, intuition, and "practical" experience. These attitudes explain why such a small percentage of the audience groups that libraries are supposed to be serving are ever to be found within a library. Only those with an unusually strong need for knowledge ever learn how to circumvent, climb over or otherwise cope with all the barriers which even well run libraries may place in their way. Others, with weaker motivation, soon give up in despair and avoid libraries in the future.

The average scientist or engineer is especially difficult to reach. He usually has an almost completely closed mind when it comes to accepting new concepts, viewpoints, or ideas, even within his professional field. Scientific and technical education does a great deal toward establishing this bias and often drives out the most creative and original students. Education in these fields places its major emphasis on the development of such qualities as order, caution, patience, control, routine, organization, and suspicion. The student learns to value the art of

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Uncertainty and change demand a high degree of human creativity to cope with them

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playing it safe, and never to gamble, take risks, or question authority. It is not accidental that many great scientific discoveries have been made by young men, too young to have learned that it cannot be done. The great scientists, who ask the questions which lead to revolutions in scientific thought, are ones who combine the scientific norms of caution, order, etc., with the ability to take chances, to gamble, to dare to attack the known, the familiar, the accepted. Many scientific breakthroughs have occurred because someone suddenly saw the meaning of an unexpected result or side effect of an experiment. Science can be practiced out of fears of unpredictability and disorder, or as an exciting voyage of discovery. Those who hide in laboratories from a messy, uncontrollable, confusing world are handicapped by their own personalities from doing much creative work. The essence of creativity is the capacity to bear and even enjoy extended uncertainty (5).

Over the years the ordinary scientist or engineer has established some effective defense mechanisms to protect himself against new ideas. He usually halts his education after he leaves school and advances his knowledge only in the area of technical details. Since he is very dependent on the respect of his professional colleagues, he is afraid to admit to ignorance or a need for knowledge. His intergroup status and his job security depend heavily on his reputation for technical competence. This ability is usually perceived as an almost mystical quality, created first by formal education, then by on-the-job experience, and never by anything so eccentric as reading (6). He is afraid to expose himself to information which could lead to conflict, conflict with his professional colleagues and his employer over the introduction of new

ideas, design concepts, or approaches to problem solving. The few who succeed in science can be distinguished from the rest precisely by the fact that they are deeply immersed in an extensive range of communication activities; they are constantly reading, writing, and talking to many kinds of scientists. Indeed, it has been suggested that invisible college networks do not function to carry information, but carry information only to justify new concepts, theories, and definitions (7). Librarians use the same kinds of defensive techniques when they hide in their library offices, building more elaborate and sophisticated indexes and administrative procedures, rather than facing up to the difficult and frightening problems of dealing with the obstinate non-user (8). After all, if libraries were designed for users, many conventional library practices, policies, and beliefs might have to be modified or even discarded.

### Necessity for Change

However much individual people or an organization might want to avoid the difficult and uncomfortable process of adapting to change, they are still forced to receive and accept some new information from their environment or risk endangering their survival. Both people and the organization to which they belong seem to establish some kind of dynamic balance between such opposing qualities as order and uncertainty, rigidity and adaptability, routine and uniqueness, efficiency and creativity. Where this balance is established on the continuum between these qualities will vary with each individual and organization. Routine and organized patterns of perception and cognition are essential to cope with the rich and never ending stream of input from the environment, but adjustment to change and new information is also essential (9). Any organism which attempted to ignore completely the necessity for either aspect of life would be unable to function effectively enough for survival. Even the optimum climate for creativity is one which establishes a ten-

sion between uncertainty and challenge, as opposed to security and certainty (10). The danger of ignoring either set of qualities can also be illustrated by library organizations. Any library which treats each document to be ordered or each book to be cataloged as a unique thing, without any reference to established procedures, would never get any work done. On the other hand, any library organization which becomes so rigid that it freezes in its rules, regulations, procedures, and red tape to the point where it loses all its sensitivity and response to its patrons, would also soon lose its justification for existence.

Many of the developments in society today are pushing this dynamic balance farther all the time toward the uncertainty end of the continuum. The ever increasing rate of technological change, the information explosion, and the current revolution in communications are all working to create an environment in which the adjustment to change and the need for effective information systems are increasingly acute. Uncertainty and change demand a high degree of human creativity to cope with them, and effective information systems are essential to this kind of coping. In today's information rich environment, those who exploit these information resources most effectively are the ones who will succeed. Those who fail to be alert to the need for continuing education and adaptation to our rapidly changing society are going to end up without a market for their skills or products. Even though the special librarian has to fight human resistance to innovation and negative user images of librarians, modern developments are creating a more favorable climate for his efforts all the time.

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In today's information rich environment, those who exploit these information resources most effectively are the ones who will succeed.

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## Effective Library-User Relationships

Unfortunately, most librarians have not yet successfully adjusted to the needs of our present information wealthy society. They still regard their precious collections as warehouses of rare and valuable materials and devote most of their innovative efforts to devising more efficient methods of storing large quantities of materials, much of which is of questionable value in the first place. Libraries which cost the user 1½ hours of his precious time simply to extract one book from their collection are now giving far from acceptable service (11). Since people always choose the information source which costs them the least effort to use, this is precisely the factor which relegates libraries to the last place on a list of places to go to for information. Most libraries today are intensely frustrating places to use; they quickly teach most users to avoid them in the future at all costs (12). The library profession has not yet really come to grips with the problem of designing and evaluating their libraries in user terms. Special librarians have, as a general rule, done the most in their attempts to persuade people to utilize their skills and library resources.

What the characteristics of a truly user-oriented library would be is not a question which can be answered definitely at present. Obviously a great deal of research on the various aspects of library service and user expectations and education still needs to be done. However, a few vital characteristics of such a library can be established. A successful library, in its users' eyes, is one that they can trust with their informational problems. An obstinate library non-user is metamorphosed into an enthusiastic user when he has learned that any order, search request, or informational need will bring forth from his library a satisfactory response with a minimum effort on his part. One of the unique qualities of a good special library is that its services are not limited just to its own collection; a special librarian can't get rid of an inquirer by referring him else-

where. An effective information service is one which has succeeded in convincing its clients that it really cares about satisfying their informational needs (13).

Unfortunately, few libraries today have this type of reputation. All too often, a user's first contacts are with clerical assistants who have no interest in helping him, or with librarians who treat him like an idiot because he can't find his way around the library. Such negative experiences, especially if they are his first ones, are extremely disillusioning. Once a library has established a bank of goodwill or positive experiences, it can afford to err or fail occasionally, but never in its first contacts with a potential client. Also, librarians usually wait for users to come to them; a user has to muster up enough courage to venture into their alien domain before his existence is acknowledged. Such a policy is obviously poor salesmanship. The feasibility of the various methods of reaching potential users in their own working environment is again an area in which much more research and experimentation is needed. Establishing courses on how to utilize library resources for different professional groups is one approach which looks promising. Librarians can no longer afford to function merely as guardians of carefully stored collections; those who are continuing to search for more effective ways of serving their clients are in tune with modern society.

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# On Editing Current Geographical Publications

Nordis Felland

American Geographical Society, New York 10032

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■ *Current Geographical Publications* is compiled and published by the library of the American Geographical Society and has appeared monthly (except July and August) since January 1938. Each issue is comprised of three parts: General, Regional, and Maps.

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LET US EXAMINE the title of the publication word-by-word, starting with the last word, *Publications*. These comprise books, pamphlets, government documents, periodical articles, and a selection of maps and atlases. The word, *Geographical*, should perhaps be "publications of interest to geographers"; certainly more than geographical publications are included. We try to live up to the word, *Current*. One trouble with bibliographies in many fields is that there is such a time lag. Although geology is a subject well served by bibliographies, geologists have said that they find *Current Geographical Publications* valuable to them because items are often included there long before they appear in geological bibliographies.

## The Research Catalogue

The subtitle of **CGP** is: *Additions to the Research Catalogue of the American Geographical Society*, and that indicates that the entries included are for materials actually in the library of the Society. Perhaps some explanation of the

term Research Catalogue should be included. In 1923, Dr. John K. Wright, then librarian of the American Geographical Society, decided that existing systems of classification were inadequate for geography. One of the main reasons for this is that the geographer is in very many cases primarily interested in the region. The system worked out by Dr. Wright was to some extent based on that of the Geographical Society of Berlin. There is a Regional Classification consisting of 52 major regions (Nos. 1-52) which are subdivided by letters and sometimes additional figures. As an example, Australasia has been given the number 45; 45a represents Australia; 45a 1 Western Australia; 45a 2 through 45a 5 other parts of the country; 45c New Zealand; 45c 1 North Island; 45c 2 South Island.

The Topical Classification is a decimal system, with 9 main divisions, but we do not use the decimal point. To illustrate this point, 5 is the number for Human Geography; 52 for Geography of Population; 524 for Movements of Population; and 52425 for Refugees. Over the years, some new numbers have been added for new concepts or emphasis in geography. Recent examples are Quantitative Geography, Solid Waste Disposal, and Theory of Location. In order to apprise readers of new periodicals, there is a section which gives additional information as to address, frequency and price.

The catalogue is divided into two parts: General and Regional. Being aware of the geographer's interest in the region, we place material under the re-

gion if possible. There are times when cards for the same item are placed both in the general and the regional sections—something like “The Development of Urban Functions, with Special Reference to Berlin.” In that case, there would be cards (and **CGP** entries) under Urban Geography and under Germany. On the right-hand margin of each page there are two digits following each entry. These are an abbreviated form of the subject classification, enabling a scholar who was interested in Population, for example, to scan the pages for the 52 entries.

### Nature of the Material

Already mentioned is the fact that **CGP** includes only material in the library of the American Geographical Society so that naturally **CGP** reflects the library's acquisition policy. The nature of geography makes the materials—both the regional and the general—varied in character, ranging from popular travel narratives to extremely technical studies. Material pertains to exploration, mathematical geography, surveying, cartography, physical geography, geology, glaciology, oceanography, climatology, biogeography, human geography, population studies, economic geography, city and regional planning, statistical material, censuses, agriculture, forestry, medical geography, anthropology, archaeology, social and cultural geography, political geography, geographical nomenclature, treaties, boundaries, sociology, history, biography, etc.

For well over 100 years the Society has maintained an active exchange program with institutions throughout the world, and one of its greatest strengths is its collection of geographical periodicals, which according to a study made by Chauncy D. Harris and Jerome Fellman (1), is unrivalled in the United States. From these periodicals, as well as many in related fields such as archaeology, ecology, geology, meteorology, etc., and regional periodicals, articles are selected for cataloging. This of course is a subjective process. For instance, from geological periodicals, articles of geographical interest are se-

lected—but we would not include an article on stratigraphy. Neither do we include highly technical articles in meteorology or statistics. Ordinarily, we do not include very brief articles, and we steer away from articles in propaganda journals. If any article seems to be of marginal value to a geographer, it may be omitted if it is in a field well-covered by bibliographies, such as geology.

Many countries and languages are represented. In the study of geographical serials by Harris and Fellman (2) they say:

*“Since geographical publications frequently report most comprehensively on regions near at hand, even the obscure serial published in an out-of-the-way place in a strange tongue may be a valuable source of information; thus the geographer is more interested in foreign and minor serials than a scholar in certain other fields would be.”*

Thus in a popular geographical periodical, such as the Swedish *Jorden Runt* (the *National Geographic* of Sweden) an article on Malta might be passed by, while one on a small region of Sweden would be included. To a certain extent the interests of the research staff of the Society and their projects are reflected in the library's acquisitions, as specialists in mathematical geography or medical geography, or the geography of the West Indies need publications which are a little more specialized than we would ordinarily acquire.

Information on the cards is not elaborate, but maps are noted. Compared with the Library of Congress cards for books, we use more contents notes than do they. In recent years a larger number of annotations have been used to indicate the scope of the article and in a few cases the type of reader for whom it is intended (for example, “Written for juveniles”).

Since the beginning, a selection of maps and atlases has been included. These entries were interspersed with the regular entries until 1964, with the word “Map” in square brackets preceding the entry. These map cards are no longer

added to the Research Catalogue, but are prepared in the Society's Map Department, which is separate from the library. Maps included are important ones of fairly large regions. No attempt is made to include maps in sets unless they are new sets, or unless they constitute regional units—such as some of the islands of the West Indies in sets published by the Directorate of Overseas Surveys of Great Britain.

For the year 1969 there were approximately 6,000 entries on 500 pages, with the annual index of about 100 pages. The sheer bulk and proportion of the index (20%) indicate something as to the amount of work involved. The index is in two parts:

1. Subject, and
2. Author and area.

The subject index is in a way a short-cut system, using the larger and more important numbers of our classification in numerical order. There is no breakdown by country under the topic, but an explanation is given as to how it is possible to relate area to topic. Making the cards for the author and subject index is rather a tricky business, requiring great familiarity with proper adjectives and generic terms in many languages. Sometimes even recognizing a place name in a foreign entry is difficult!

### Similar Publications

The **CGP** is the standard current geographical bibliography published in the United States. Although the coverage is worldwide (like those produced in other countries) the emphasis is on the home country. In effect, since the publication of the American Geographical Society's Research Catalogue by the G. K. Hall Company in 1962, **CGP** has served as a supplement to those 15 volumes. Similar in arrangement (topical and regional) is the bimonthly *Documentatio Geographica* begun in 1966 by the Institut für Landeskunde in Bad Godesberg, Germany, which has the advantage of an annual cumulation. The 1968 volume contained about 4,000 entries. Also using a

topical and regional arrangement is the Russian abstract journal, *Referativny Zhurnal*, published by the All-Union Institute of Scientific Information (VINITI) of the USSR Academy of Sciences in Moscow. Each monthly issue contains more than 2,000 bibliographical references and abstracts, and is particularly useful for the Soviet Union and the People's Democracies. However, it must be remembered that a staff of 35 works at VINITI, and yet most of the abstracts are written by specialists outside the staff, to whom photocopies are sent for reporting. *Geographical Abstracts*, begun in 1966, is published bimonthly in four series at the University of East Anglia, Norwich, England. The region is completely subordinate to the topic; only through a computer-produced index is a searcher able to locate material on a region. Although more than a dozen bibliographies of current geographical literature are being published, these four\* are the most comprehensive.

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Miss Felland is librarian emeritus of the American Geographical Society, New York. Her paper was presented during a map workshop at a meeting of the Geography and Map Division on Jun 8, 1970, during SLA's 61st Annual Conference in Detroit.

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\* At the present time an American geographer is making a study of these, and his findings will be of interest to all in the field.

# A Paradigm of Commitment

## Toward Professional Identity

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■ Librarianship is not fully recognized as a profession. In order to gain the full professional recognition and autonomy that it deserves, librarianship must develop a new awareness and conception of itself and its potential. Its definition of "service" must change. Librarians must develop an integrated set of common

values at a field level and be willing to live by them, *even if conflict* is the result. They must think of themselves as a collectivity instead of a collection of individuals under a professional guise. Their present values must change from tacit, implicit ones of individuals to overt, explicit values of the field.

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SEVERAL YEARS AGO a sociologist by the name of William J. Goode discussed the professional nature of librarianship. He felt that librarianship falls somewhere in the middle of a professional-non-professional continuum. To him, librarianship was engaged in a struggle for full professional recognition.

In this struggle, he felt librarianship had certain advantages:

- Librarianship is a full-time occupation specializing in a certain area and is not subordinate to any other group in the same situs, such as nursing is to doctoring in medicine. Related to this is the fact that librarians have a sense that their occupation is unique.
- Librarians are closely attached to learning, which is a prime source of occupational prestige in our society. In addition, an increasing number of librarians are trained in professional schools, some of which are associated with universities and offer a doctorate.

- Librarians belong to professional associations, at local, state, and national levels.
- Some librarians have formulated a code of ethics.

But Goode did feel that librarianship lacked two key attributes that keep it from becoming fully accepted as a profession. One is a prolonged specialized training in an abstract body of knowledge. The second is a collectivity or service orientation, in terms of professionally defined "needs" of its clients, rather than what its clients simply "want."

In terms of the knowledge base, Goode maintained that librarianship had failed to develop a general body of scientific knowledge dealing with information storage and retrieval, but depended upon rather rule-of-thumb, local regulations and rules, plus a major cataloging system for most of its day-to-day work. Even now, some librarians express doubt about the importance of formal education for



librarianship. Goode maintained that the public did not believe that the librarian has a knowledge base specific to his occupation. He felt that the public views librarians as gatekeepers and custodians to a "stockroom" of books and periodicals. This aspect, if true, seems to be intensified by the fact that the public largely meets only the unskilled and semi-skilled help in libraries and judges the trained librarians, who work mostly away from the eyes of the public, by the performance of the help. Even today, some librarians seem to be particularly sensitive to being referred to as "gatekeepers" or some similar term. This is not to deny that others particularly seem to be proud of being called "bookkeepers." According to Goode, another factor related to the knowledge base is that the librarian begins to assume administrative tasks earlier than in most other occupations. Much of this administration is not specific to librarianship, for it consists instead of integrating human beings in a corporate enterprise and not in pushing back the frontiers of knowledge in the field. Some librarians even argue that such an administrative emphasis is properly a central task of librarians. In fact, status or prestige today seems to be achieved in the field mostly by administration; that is, in taking on more administrative responsibility rather than being distinguished as a specialist.



Without a firm knowledge base and its recognition by the relevant publics, librarians cannot easily claim autonomy and control over their own affairs. Closely related to this is the definition of service orientation that most librarians give themselves. Most librarians abdicate much of their autonomy from the start in an effort to please their clients. "Serving" the client means "helping," learning his wishes and satisfying them. "Serving" does not seem to mean—to librarians

in general—defining what is best for the client in terms of some set of professional standards of concern and giving that to the client. The librarian works within his client's wishes, instead of imposing his professional categories, conceptions, and authority on his clients. In other words, librarians seem to respond to the expressed "desires" of clients instead of the "needs" of clients as defined by a body of professional library knowledge.

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### *Conflict*

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But this is not to say that no conflict exists between librarians and their clients, nor is it to say the client always gets his way. In my studies of the status concerns of a group of professional librarians working in a large university library, I found that the librarians were concerned and threatened with their status and that this concern was reflected in conflict with their clients. The more librarians were concerned about the status of their field the more they reported and seemed to have conflict with clients that might be regarded as being a threat to their own status. For instance, in regard to faculty, some librarians made these following observations:

*“. . . We threaten them—they feel our ignorance is so great that we are a danger to them and the system. . . .”*

*“. . . they have a low opinion of a professional librarian.”*

*“I think the faculty has a feeling that librarians are incompetent in their areas. They look down at librarians for their lack of academic degree background.”*

*“I have a feeling that many times the faculty think we do not know what we are talking about. They have a feeling that librarians cannot possibly know what materials they want. . . .”*

*“Faculty members use the library only from their own point of view. . . . There is an interpretation of rules so as to benefit their own areas. . . .”*

“. . . . There is a tendency on the part of the faculty to dominate both the security and staff of the library. Many librarians do not have control over the issuing of keys to the library, thereby directly influencing the attrition rate of their respective collections. . . . Faculty thinks RHIP (Rank Has Its Privileges) and that rules are for other people.”

“. . . . faculty members refuse to learn how to use the library. They have a feeling of ‘instantism.’ That is, everyone having his own copy of a book. There is a backlash and the faculty blowing up for some minor thing happening in the library. . . .”

“They are unreasonable. Some of them use cuss words on the phone and demand things that we can’t give under the university code and policy. . . .”

“. . . . the librarians become a whipping boy for faculty frustrations. . . .”

The persons who reported the greatest amounts of conflict were those who were most concerned about being professionals. They were the persons who wanted more autonomy for themselves and their field. They felt that library associations were important and should be even more important. These were the persons who reported their work as being of utmost importance in their life. These were not the castaways of the field; these were librarians who regarded themselves as professionals.

There is a myth that still seems to exist to a certain degree in librarianship. It says there are no real grounds for conflict between librarians and the public they serve. It says that apparent conflicts are due primarily to a lack of communication and to a surplus of misunderstanding. According to this view, the problems experienced by librarians with their clients could be solved by improved human relations. It seems to assume that conflict *per se* is bad and non-conflict *per se* is good.

But the situation is not this simple. Real differences do exist between librarians and their clients.

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## Client Differences

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First of all, there are differences among clients. Take the general area of the sciences, for example. This area is a good choice because much research about the information needs and uses has focussed on scientists.

Younger scientists may differ in their information needs and uses from older scientists. It may be that younger men as they attempt to master a fresh field may depend more heavily upon written sources than do the older men. The older men, having had time to establish a niche in their discipline, may rely more heavily upon invisible colleges of colleagues and verbal communications.

Regardless of age, some persons will be more oriented toward success in terms of their discipline, others in terms of their employer. Success in terms of the discipline means doing research and keeping up-to-date with the latest scientific fashions. Success in terms of the employer means “local” orientations. Differences in the nature and types of information desired by persons with these different orientations are to be expected.

A person’s work and work conditions are probably very important for him and his information needs. They give him a social context, an identity, and affect his entire life cycle. His occupational performance, expectations, and interests are affected by factors such as educational level, marital status, sex, and age, plus factors such as his department’s prestige, his controls over his work, the extent of teamwork, and departmental community. Glaser, in a study of organizational scientists, found different constellations of working conditions, variations in career concerns, and differences in perceived recognition related to each hierarchical position in an organization. Andrews found that scientific performance is related to the amount of time a person spends on technical work, teaching, or administration. Shepherd found that differences between scientists and engineers seem to revolve largely around identification and conditions of work.

There are other differences in the disciplines too. For example, creativity reaches a maximum at different ages in different disciplines. The evidence, in general, indicates that chemists can be expected to make their major contribution before their thirties or not at all. Individuals in other areas, such as geology, may be expected to make their major contributions much later in life.

In short, there are differences between clients. These differences are related to a whole host of factors, and they can be expected to be reflected in the nature and types and maybe even amounts of information needs and uses. There is no "public"; there are hosts of "publics," each with their own unique demands.

This is not a point to be taken lightly. I know of the case of a person who had an article rejected within the past two years by the editor of a major library journal, because the author had found statistical differences in information needs and uses existing between faculty, graduate students, and undergraduates in a university. The reason the editor gave for rejection was that the policy of the journal is to emphasize similarities of information needs, rather than differences. Remember that point!

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### *Proliferation of Information*

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Today there are great pressures toward publication. Competitive pressure for priority in science is so great that there is a rush to get into print even before an experiment has actually been performed. One might think there is hardly time left for research with all the reprints, requests for reprints, prepublication copies, inquiries concerning published work, correspondence relating to general scientific issues, journals, books, pamphlets, technical reports, grant requests, conferences, and other forms of written or printed communications. To top it off, the half-life of research in science, the time in which half of the research done becomes obsolete, is decreasing. At present, in the bulk of the natural sciences it is only about five years.

There is an explosion of information and a problem of handling it. Some have tried to cope with the explosion by proposing the use of qualitative control devices. In general, these proposals place the burden of control on journal editors who evaluate articles for publication. This approach restricts the number of articles per journal but probably increases the number of journals. In addition, information regarded as *insignificant* in a given context today may be regarded as *invaluable* at some future date. There is a problem of values and the change of values. Other proposals emphasize the improvement of information dissemination and retrieval. An effort is made not to stem the avalanche but to disperse it. This is not viewed as the job of editors but of librarians and other information specialists. These proposals tend to view the librarian as the efficient technician who has no part in the information process except to handle the "dirty" details of information distribution. Despite the high-sounding rhetoric, the librarian becomes the "water boy" on the team, an efficient handler of information, but little else.

Librarians in reality are much more. They not only handle information, they create and destroy information. They select information. They evaluate information. They give priorities to information.

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### *Priorities*

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Librarians have value commitments and their choices are not unbiased. Suppose a librarian has \$500.00 to spend. The physics department wants a set of reference books that costs almost the full amount. The history department wants some early works which cost about the same. Who gets the priority? How does the librarian decide? Is history more important than physics or *vice versa*? If a librarian decides on some sort of compromise, what values does he use to decide who gets what? Is a compromise a "good" thing? Why? As librarians, you know that you make similar decisions

nearly every day. You decide, within certain limits, who gets what. You are faced with limits of time, finances, etc. Within the contexts of these limits, you make choices about what knowledge is to be available.

Alvin W. Weinberg, who was chairman of the President's Science Advisory Committee, said: "Those who control information will become a dominant priesthood in the science of the future." He is right. If your choices emphasize certain areas of science, those areas will benefit to the possible detriment of other areas. If your choices emphasize science areas, humanities areas may unduly suffer as a result. In part, your choices determine the areas of knowledge of the present and of the future. You are part of the process of knowledge creation and destruction.



Our world is faced with many problems today. There are problems of pollution, civil rights, foreign policy, health, housing, age, business, labor, taxes, etc. Which areas receive what priorities? By the choices you make every day, you choose the areas and the priorities. What is the "ideal" society? Whether you realize it or not, your choices are helping create it. If you try to please the interests of everyone, you may not satisfy anyone—including yourself. If you try to please all the interests of one person, you will probably let all the rest suffer. But whatever you do, *you* are doing it. You are making moral and ethical decisions about "the good life."

But librarianship does not have this sense of moral urgency and awareness. It seems to lack a sense of drama. It lacks a task, a destiny, a set of issues about which it is concerned. Have you ever read the American Library Association's code of ethics passed in 1939? I mention the ALA code because SLA does not have something called a "code of ethics." The ALA code of ethics is not, in fact, a code of ethics. It is a series of run-of-the-mill administrative and personnel policies. To put it in current student terminology, it is also one of the most milk-toast, establishment-oriented documents a person may ever get to read. Change, even if it is necessary, is to be avoided. For instance, the "final jurisdiction of the library rests in the officially constituted governing authority." What other profession would tolerate such a statement? This is similar to saying that a doctor is not supposed to decide what is best for the interests of his patients. The chief administrator of the hospital is to decide if a patient needs an operation or a drug. The doctor is then only supposed to carry out the administrator's decision, even if it kills the patient. Preposterous! No wonder the public considers libraries but not librarians important. Here we now have an amoral person making moral decisions which he pretends he does not make. Librarians are functionaries for somebody else's business.

What other profession is so concerned about lay opinion that it would fail to have its own soul? The code, for instance, urges fairness and wisdom in book acquisition, a rather wishy-washy exhortation, but does not assert the simple ethical duty to follow professional principles in this matter and to treat lay opinion as irrelevant and incompetent. To the extent that librarians view their duty as giving people what they want, instead of what they need as defined by the profession, to that extent librarians are clerks and not professionals. Of course librarians must take the wishes of their clients into account, but would a doctor allow a patient to have poison just because he desires it?

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## Moral Commitment

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Librarians have an obligation to educate their clients. As a profession and as individuals they must have a commitment to run personal risks to fulfill their high obligation to society. They must be willing to face complaints in terms of an integrated set of professional values, instead of having an exaggerated sensitivity to them. They must risk unpopularity if it is necessary to serve the larger interests of the society.

I am not talking about censorship. Librarians are doing that already at an individual level. By their individual choices, they emphasize certain areas to the detriment of others. In some cases librarians may not acquire materials they think they should because it would arouse too much criticism, and the librarian could be fired. After all, if his constituency rejects

him, he cannot turn to another clientele, and his profession is not integrated in its values to protect him from the laymen. If librarians are to be fully professional, they must develop commitments that apply to the profession as a whole. The profession must develop values as to which areas of knowledge have priority. Value commitments must become explicit and supported at the level of the



field and not just be implicit decisions of the fields' individual practitioners. Librarians must develop a consciousness of what they are. They are not just clerks. They are an indispensable element in the creation, preservation, and loss of knowledge and values. With the increas-

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ing explosion of knowledge, librarians are more and more becoming in the position of high priests of society. They have the obligation and responsibility to speak out on the values society should have. If air traffic controllers feel public safety is endangered, they strike. They face up to their values. Would a librarian strike? At present I think generally not. But are not human attitudes, ideas, knowledge, and minds at least as valuable as human bodies?

Of course, some would argue that the client has as much right as the professional to assert his values. That is true. Ultimately, a profession justifies itself by showing that the values of the profession are in harmony with at least the long term interests of its clients and the society. So long as a profession controls and regulates itself so as to help its clients and the society in a way they cannot help themselves, it is allowed the autonomy it

needs and seeks. When a so-called "profession" fails to regulate itself, then society regulates it. If it has no essential core of values, then society may not even need to regulate it. Why should a library client even worry about librarianship now? The public probably sees no way in which it can be saved or hurt by librarians. After all, as it is now, librarianship is not allowed to control itself and apparently does not need to be controlled by others. There is *no* smoke, because there is *no* fire.

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### *Professional Identity*

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Librarians must develop a consciousness of themselves. They must assume their importance and work toward their acceptance. They cannot be scabs to each other. When a librarian is, in effect, fired by a department after 20 years of work

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in that department for alleged incompetence, librarians should not allow that to happen. They should decide for themselves in terms of their values if a co-librarian is actually incompetent. Even a union would not allow a co-worker to be fired unless they felt it was just. And would they allow a fellow union member to take over the fired man's job, if they felt the man was unjustly fired? It is unlikely. How can librarians even call themselves professionals when they rush in to take over a fellow professional's job, who was unjustly fired by the profession's own standards? And how can library administrators allow such a situation to happen unless their identity for their employer is greater than their commitment to their field? Until librarians as a group develop a clear sense of professional identity and are willing to commit their lives to it, they will remain the prostitutes that they appear to be.

Of course, conflict is not an end in itself. But a certain amount of creative tension may be necessary if librarianship is to fully experience its potential. Once librarianship defines its values, those values may be a threat to others. Tension may then result. But if the tension is avoided at all costs, whatever values librarianship has will disappear. With no values, librarianship will be no threat and there will be no tension. Tension indicates values, commitment, and a moral struggle.

No longer can librarians work as individuals under the guise of a field. As a group they must work together for the recognition they deserve as being an indispensable part of the knowledge process. This struggle may cost them—and cost them a lot—but they dare not avoid it. It is for their interest and the interest of their society that they meet the challenge.

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It is not a question of librarians becoming professional or not. They must be professional. Their position now is not inherent. They are not inherently clerks, custodians, or cop-outs. They are potentially *librarians*. Librarians must recognize that they can change their position, if they will. In fact, from my point of view, they must.

But the question is, are they—are you—willing to pay the price?

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# Translations in a Changing World

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■ The dynamic expanding nature of science and technology, as well as the multiplicity of languages in use today, complicate the librarian's role in the information transfer process. The purpose of this paper is to examine the function of translations and translators in this process and to suggest alternate tech-

niques. Experience with these alternatives is reviewed and evaluated; specific applications are recommended. It is concluded that a modification of the pattern of custom translating is desirable in many circumstances, and that librarians and information specialists have a key role in this activity.

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**T**HE EXPANDING nature of science and technology is a well-known phenomenon in our contemporary world. As each nation endeavors to keep abreast of new scientific and technological discoveries, this effort is complicated by the fact that reporting of such new developments occurs in a multitude of languages. In the past, skilled translators working largely on a custom basis provided the necessary services to make this knowledge understandable. However, the time is long past when "custom translating" can meet all of our needs. In what follows we will discuss the custom translation and alternatives to it as a means of disseminating needed scientific information to those who can benefit from it.

## Cover-to-Cover Translation Journals

One approach to this problem is to rely upon one or more of the many cover-to-cover translation journals as a means of keeping up with the latest foreign developments. These journals are generally well edited and nicely printed

on good paper, but they often appear from four to as many as twelve months after their foreign counterparts. Additionally, because they are expensive, it may be advisable to subscribe only to those journals in which the user group has a fairly strong and broad interest.

## Consultant Experts

Another approach is to rely upon linguistically qualified experts or consultants who maintain a current familiarity with the world's literature in a special field. In the case of infrequent or one-time needs, this may be the most economical solution, although it has the disadvantage of exposing proprietary matters to outside eyes and it does not necessarily ensure a full scanning of the available foreign literature.

## Custom Made Translations

If the number of translation services in existence is a reliable indicator, it would seem that one of the most frequently used approaches is to purchase

custom made translations of the foreign literature pertinent to an organization's interests. This method avoids buying wholesale quantities of translated articles, as when subscribing to the cover-to-cover translation journals, but—on a word count basis—one must pay a premium for what is received. The cost of custom translations probably averages close to \$0.02 per translated word. However, depending on the language involved, the rate may vary from half that to perhaps three times as much as in the case of translations from some of the Oriental languages into English.

### **Assistance from Associates**

For many organizations one or more of the preceding alternatives will serve adequately most of the time. In fact, for very small groups these may be the only practical choices available, although it should be noted that extremely urgent needs often cannot be served well by these methods. In these instances it may be that the organization has a staff member with some familiarity with the foreign language in question. Usually the larger and more diverse the organization the more likely this will be the case. However, it is important that the individual with knowledge of the language have sufficient free time available and also have some substantive understanding of the subject matter he is translating. Although assistance of this type from within one's own organization cannot be arranged in all cases, libraries and information groups can negotiate it more effectively if they maintain rosters of staff associates who have knowledge of specific foreign languages. We have done this, and on occasion it has been of significant help, although in a number of instances the associate did not have time available or the text to be translated was too difficult for him. Paying such a person to do the translating on his own time is a possibility, but in our experience this has not been satisfactory because the slow progress of an unskilled translator makes the job either too expensive for us or too frustrating for him.

### **National Translations Center**

This Center (formerly the SLA Translations Center), located at The John Crerar Library in Chicago, has a pool of over 150,000 translations contributed by cooperating organizations. If they have the item you need, it is available at modest cost, and when time permits this source should not be overlooked. However, the probability of the Center's pool containing the translation you need may vary greatly depending on a number of factors, and accordingly the Center cannot be considered a sure source for all needs.

### **Your Own Translator**

If we reject the foregoing methods wholly or in part, what other possibilities are open to us? One is to acquire your own translator, as we did in 1961. This has resolved most translating problems encountered since that time. One advantage of it has been our increased capability to serve different groups. For example, we have served our divisional translation requirements in research, development, sales engineering, public relations, business matters, foreign language film production and even employee training. If your own translator prepares a careful, well-edited translation, it may not be less expensive than a custom made product from a commercial source, but noticeable savings are possible through the provision of verbal or rough translations of all or part of an item of interest. It is also advantageous to know, after translating a portion of a presumably vital article, whether this information is already known to the requestor or is not wholly relevant to his needs; therefore no more time need be spent on it. This feedback enables us to utilize our translating capability almost exclusively for information which is of real value to the requestor. We do not gamble that a translation purchased from an outside source may contain new or useful information. In addition to deriving full value from each dollar spent for translating, it is advantageous to be able to respond promptly when a request is received. Be-

tween 1961 and 1969 we regularly translated the contents pages of a number of foreign journals, provided brief abstracts from some of these, and distributed these listings to key personnel on a regular schedule. If a researcher expressed an interest in an article he had seen on our list, he needed only to contact our translator to learn more about the article. He was given a quick verbal summary of the essential portion, or selected parts were translated, such as the description of the experimental method, the findings or the conclusions. Our policy was to announce and make known the existence of as much foreign literature as is useful to our patrons, while at the same time we translated only those parts actually determined to be needed. We endeavored to remain flexible and provide anything from quick verbal summaries to fully edited translations, but to do only as much or as little as was justified.

Having one's own translator probably gives an organization its best protection when dealing with proprietary matters, with "company confidential" items and with security classified literature in a foreign language. Problems of this type may not be a daily occurrence, but when they happen it is satisfying to be able to handle them with ease.

Foreign correspondence involving security clearance of foreign born or foreign educated employees, foreign invoices, foreign business correspondence, and letters from foreign government or institution officials are a few of the other types of items we have handled.

A somewhat unusual benefit derived from having our own translator has been the offering of a course in reading scientific and technical Russian given for interested employees under the sponsorship of our Technical Information Services Department. The course covered an academic year; 12 employees graduated.

A disadvantage in the concept of having your own translator is that most small organizations will probably not be able to either justify or afford the services of a full-time translator. The medium sized organization may have a variable translating load which will at times

tax the capacity of the translator and at other times leave him with little to do. Perhaps only the very large organizations will have a volume of translation tasks sufficient to even out the work load. At Aeronutronic Division our solution to this problem has been to combine translating with a closely related technical function which was not an inflexible daily assignment, and to enlist the capabilities of three additional departmental staff members who had knowledge of foreign languages or who were skilled in editing. Thus we have been able to absorb peak loads without encountering crises, and at times when the load was light we have utilized our translator in an information analysis function which helps him to maintain his technical and scientific competence. The additional staff help from this Department, together with our translator's abilities, has enabled us to complete translation assignments from German, Russian, Ukrainian, Polish, French, Spanish and Italian into English. And with assistance from some technical personnel in other departments, we have handled a few other languages "in-house." A final disadvantage to this concept lies in the difficulty in locating and recruiting personnel with the desirable linguistic skills and appropriate substantive knowledge.

The solution to information transfer from one language to another is neither easy nor simple. Furthermore, what seems to be an effective solution for one organization may not be practical for another. Yet libraries and information centers can play a key role as is suggested in this paper. To the extent that this role is acknowledged and implemented they will receive recognition and reward.

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*Dr. Linder is manager of Technical Information Services for the Aeronutronic Division of Philco-Ford Corp., Newport Beach, Calif. Presented at the Aerospace Division luncheon on Jun 10, 1970, during SLA's 61st Annual Conference in Detroit.*

## Evaluation of Indexing

### 3. A Review of Comparative Studies of Index Sets to Identical Citations

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■ Five different papers are reviewed in this part comparing indexing to identical citations. In none of the five papers reviewed can any theoretical understanding be obtained of the indexing process. Yet, the method of comparing index sets for identical articles does illustrate the

need for a better understanding of the indexing function. The divergence of indexing assignment by both human and machine indexing does pose a problem. It was impossible to find any patterns in the examples cited.

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FIVE PAPERS which have generated comparisons of indexing for identical articles will be reviewed. The paper by Ruhl (1) gives a comparison of KWIC indexing to the human indexing of *Chemical Abstracts*. This paper is the only one which has attempted a direct comparison of KWIC indexing with human indexing other than those published on Simulated Machine Indexing. The other four papers reviewed are Damerau (2), Bystrom (3), Painter (4) and Bloomfield and Schafer (5).

#### KWIC Indexing vs. Human Indexing

In the first paper reviewed, Ruhl compares the human indexing of *Chemical Abstracts* with that of KWIC indexing. There is no attempt to make any statistical analysis in order to evaluate the indexing presented. The evaluation that is done appears in verbal critical essay form.

Table 1 from Ruhl shows the index sets prepared by *Chemical Abstracts* and *Chemical Titles* for one sample title. The KWIC terms, "angle," "determine" and "scattering," appear in the index modifier phrase under the *Chemical Abstracts* term "Light" as "scattering of, small-angle, polymer molecular property detn. from." In this instance, several of the KWIC index terms appear not as *Chemical Abstracts* index terms but as *Chemical Abstracts* words in the modifier phrase.

Another example given in Ruhl's paper had the word "solvents" in the title.

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This is the third in a series of five articles on "Evaluation of Indexing" by Mr. Bloomfield. Part 1, "Introduction," appeared in *SL* 61 (no.8): p.429-432 (Oct 1970). Part 2, "The Simulated Machine Indexing Experiments," appeared in *SL* 61 (no.9): p.501-507 (Nov 1970). Parts 4 and 5 will appear in the January and February, 1971 issues of *SL*.

Because the KWIC index could not show the various solvents mentioned in the article, a generic term appears in the KWIC index terms. However, the *Chemical Abstracts* index added three specific solvents which were omitted in the KWIC index. Ruhl says that "the title cannot include a detailed list of all substances" (1).

Ruhl felt that the KWIC terms for the title given in Table 1 were "adequate" indexing for *Chemical Abstracts*. One of the titles which Ruhl did not consider "adequate" for KWIC indexing contained "three concepts which were included in *Chemical Abstracts Subject Index* were missed by *Chemical Titles*" (1).

In making a statistical study of the value of titles in covering concepts, Ruhl found (1) that of the 84 titles she studied:

*"48 titles included all the subject headings or concepts which were indexed in Chemical Abstracts, 14 titles missed one entry, 12 of the titles missed two entries, and 10 missed three or more entries. . . . In similar studies, Maizell and Kraft*

. . .

**Table 1. *Chemical Titles* KWIC Keywords Compared to *Chemical Abstracts Subject Indexing* (1).**

<u><i>Chemical Titles</i></u>	<u><i>Chemical Abstracts</i></u>
Angle Determine High Light	Light scattering of, small-angle polymer molecular property detn. from, 18025d.
Molecules	Molecules light scattering by, see light (cross-reference)
Orientation Polymer	Polymers molecular properties of, detn. from light small-angle scattering, 18025d.
Scattering (CT, No. 3, 1960)	(CA 54:18025d)

The full title for this example is: "Theory of the Small Angle Scattering of Light to Determine the Shape, Size and Orientation of High Polymer Molecules in Flow."

*found title relevancy to fall within the range of 50 to 65%. Kraft found 10.5% 'nondescriptive' titles."*

As part of Ruhl's interpretation, she says that "it is difficult to use quantitative measurements and reach quantitative conclusions" (1). The only quantitative analysis made by Ruhl concerns the number of concepts omitted from the titles but which were covered in the subject index to *Chemical Abstracts*. Because titles are imperfectly written, KWIC indexes suffer.

### Comparison of Machine Index and Manual Index

The paper by Damerau (2) is somewhat like the papers on Simulated Machine Indexing in that Damerau has conducted an experiment in automatic indexing and compared the results of the machine produced list with one manually prepared. However, no statistical evaluation of the indexing is included in his paper. The intent of the method used by Damerau was to produce a list of terms based on the coordinate indexing method which allowed only single word terms. Both the manually prepared set and the machine produced set have followed the single word rule so rigorously that the word "De Gaulle" was split into two words, "De" and "Gaulle."

The average number of index terms per article which Damerau produced in his machine sets was 25.0 from the seven samples given in his paper. The average number of index terms in his manually produced index sets was 16.7 of the seven examples. It is obvious that this experiment was conducted to develop indexing which would be machine searched. Any system which produces over ten index terms per article, and as single words, is not meant for the average printed index used manually in libraries.

The index terms generated by Damerau in this experiment by machine were determined by a frequency count. Damerau took a publication with a million words in it which covered the same subject content as the seven articles he processed. From the document with a million

words in it, he took ratios of the number of times words appeared in it. If the word "war" appeared 1,000 times, the ratio would be 1,000 to 1,000,000 or 1:1,000. He then found the ratio of the number of words which appeared in the texts of a few thousand words. By using arbitrary statistical devices he limited the index terms to certain limits of his ratios. He also included a stop word list. Damerau comments as follows on his indexing philosophy (2):

*"Even granting my indexing assumptions, the list of selected index terms is*

*still arguable. It seems to me unlikely, however, that any reasonable index set would be radically different, and in that case, the conclusions drawn should still apply, even though the numbers given here may be different."*

In an attempt to show that others have indeed used a "radically different" set of index terms, the *Public Affairs Information Service (PAIS)*, Vol. 48, 1962 was searched. *PAIS* indexed a similar article from *Atlas* with an identical title "Nuclear Power Balance." Because Damerau does not give exact bibliographic identi-

**Table 2. Comparisons of Indexing Generated by Damerau and PAIS for the Article Entitled "The Nuclear Power Balance."**

Damerau's Manual Index Set (2)	Damerau's Machine Generated Index Set (2)	<i>Public Affairs Information Service.</i> Vol. 48, 1962
Age	Age	Age (0)
Atomic	Atomic	Atomic Weapons (X); also found as Atomic Bombs; Atomic Power; Atomic Warfare; etc.
Balance	Balance	found only as Balance of Payments; Balance of Power; and Balance Sheets
Bomb	Bomb	found only as Bombs, Atomic, see Atomic Bombs
Capitalism	Capitalism	Capitalism (0)
Communist	Communist	found only as Communist Countries and Communist Party
	Consequence	(0)
	Consideration	(0)
	Dilemma	(0)
Doctrine	Doctrine	(0)
	Even	(0)
	Face	(0)
	Form	(0)
History	History	History (0)
Historically	Historically	(0)
	Leader	(0)
	Limit	(0)
	Line	(0)
	More	(0)
Nuclear	Nuclear	found only as Nuclear Engineering; and Nuclear Reactors; etc.
	Only	(0)
Policy	Policy	(0)
Political	Political	found only as Political Ethics; Political Power; and Political Science
	Politically	(0)
	Risk	found only as Risk (Insurance); and Risk Capital
Soviet	Soviet	found as Soviet Union, see Russia
Thermonuclear	Thermonuclear	(0)
War	War	War (0)
Weapon	Weapon	found as Weapons, see Armaments; Atomic Weapons; Guided Missiles
Western	Western	found as Western Australia; Western Electric Co.; Western Hemisphere; etc.

Key for *PAIS* index terms:

(0) —index term not found

Age (0)—Age appears in *PAIS* as an index term, but this particular article is not indexed under this term.

X —This particular article is indexed in *PAIS* under this term.

fication, it is difficult to say if the article indexed in *PAIS* is identical to the one shown in his article. The title for both articles is identical and therefore indexing should be quite similar. In Table 2, the two index lists generated by Damerau are shown with that of *PAIS*. The index set was prepared by Damerau manually. The generated index set was prepared by the machine indexing method developed by Damerau. The third list shown in Table 2 contains the one term used by *PAIS* to index the article entitled "Nuclear Power Balance." Table 2 also includes the *PAIS* vocabulary which is compared to Damerau's two lists. The *PAIS* indexers have indeed used a "radically different" approach than Damerau for this article.

The indexing and abstracting journals which are meant to be searched manually have a far different approach to indexing than when using a method of indexing meant for machine searching. However, *PAIS*, for one, is not concerned with indexing for machine and has approached the problem of indexing in quite a "radically different" way. Where Damerau has selected seventeen words in his "index set" for the article shown in Table 2, *PAIS* has listed only one. *PAIS* has listed at most only four terms which are used identically to those of Damerau's two lists. When it comes to actual indexing, *PAIS* indexed the article on "Nuclear Power Balance" under but one heading, not the 17 of the Damerau Index Set or the 30 of the Damerau Generated Index Set. Of the 30 words in the Damerau Generated Index Set, *PAIS* did not use 17. This points to the great gap between what Damerau considers good indexing and what *PAIS* considers good indexing.

Nowhere in Damerau's article is there an attempt to evaluate indexing in a statistical fashion. The only judgments given are subjective ones based on the coordinate indexing experience of the author. There is much statistical elegance in this article but it deals only with how to define the frequencies by which single words are chosen from the text and used as index terms.

### Examples of Inconsistency

A third study for review, conducted by Bystrom, compares the indexing of *Soils and Fertilizers*, a publication of the Commonwealth Agricultural Bureaux, *Chemical Abstracts, Biological and Agricultural Index* and *Bibliography of Agriculture*. In her article, there are four examples, of which one is shown in Table 3.

There are additions to Table 3 which were not included in Bystrom's article. The format is changed so that it is possible to compare terms more easily. For instance the term, Phosphorus, was used by two of the indexing journals and was also part of the title of the article. The index terms and modifiers were taken directly from the published article.

Differences between the table in Bystrom's article and Table 3 are that the table has been re-arranged, the KWIC indexing has been manually determined, and the number of index terms given.

Mrs. Bystrom did not attempt any statistical evaluation of the indexing. However, she does have some pointed comments to make about the indexes. She says (3):

*"[In] seeking the most comprehensive coverage of the literature, the agricultural librarian needs Bibliography of Agriculture. He also needs plenty of time, patience, and access to a wide selection of journals in order to use it effectively. To use Chemical Abstracts to advantage he may need imagination, familiarity with CA's indexing rules, and ability to see the 'chemical viewpoint.' The agriculturalist's viewpoint seems more consistently reflected in Soils and Fertilizers, which also offers greater depth of indexing than either of the two U.S. indexes for agriculture."*

Bystrom's closing comment in her article says "there will still be occasions when (the agricultural reference librarian's) ingenuity, more than his indexes, will lead him to the information he must have" (3). This condition arises not only from poor subject indexing but from coverage problems as well. Bystrom does not offer any possible solutions to the in-



**Table 3. Comparisons of Agricultural Indexing Publications Plus a Manually Prepared KWIC Index (3).**

<i>Soils and Fertilizers</i>	<i>Chemical Abstracts</i>	<i>Biological and Agricultural Index</i>	<i>Bibliography of Agriculture</i>	<i>KWIC Indexing</i>
(3 index terms)	(4 index terms)	(1 index term)	(1 index term)	(5 index terms) Activity
Alluvial soils	—	—	—	—
surface activity of soil P in	—	—	—	—
—	Aluminum phosphate	—	—	—
—	surface activity of	—	—	—
—	Calcium phosphate	—	—	Inorganic
—	surface activity of	—	—	—
—	Iron phosphate	—	—	—
—	surface activity of	—	—	—
Latosols	—	—	—	—
surface activity of inorganic P in	—	—	—	—
Phosphorus in soils	—	—	Phosphorus in soils	Phosphorus
surface activity of inorganic, soil texture and	—	—	—	—
—	Soils phosphorus in surface activity of	Soils phosphorus content	—	Soils
—	—	—	—	Surface

Title for the article described is: "Surface Activity of Inorganic Soil Phosphorus."

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**Table 4. Examples of Indexing from ASTIA, AEC and NASA (4).**

A sample taken from the triplicate indexing of ASTIA, AEC and NASA showing similar indexing.

<u>AD 269 904</u>	<u>NASA N62-10082</u>	<u>AEC 16:9714</u>
Nuclear propulsion	Fluid mechanics	Rocket motor nozzles
Rocket motor nozzles	Heat transfer	
terms used only for machine searching	Hydrogen	
Analysis	Nozzles	
Cooling	Nuclear rockets	
Feasibility studies	Radiation cooling	
Heat transfer	Rocket nozzles	
Hydrogen	Specific impulse	
Temperature	Wall temperature distribution	

A sample taken from the triplicate indexing of ASTIA, AEC, NASA showing divergent indexing.

<u>AD 271 896</u>	<u>NASA N62-10008</u>	<u>AEC 16:9337</u>
Magnetic storms	Cosmic rays, cosmic radiation	Cosmic radiation
Cosmic rays	Geomagnetic storms	
Terms used only for machine searching	Solar cosmic rays	
Balloons	Statistical correlation	
Data		
Hazards		
High altitude		
Mathematical prediction		
Periodic variations		
Solar energy		
Solar flares		
Space flight		
Statistical analysis		
Sunspots		
Terrestrial magnetism		

dexing or coverage problem. She does point out the differences in viewpoints by indexers and the inconsistency of index journals in defining the same article.

A fourth study showing comparisons of indexing for identical items was done by Painter (4). One of the objectives of this study was "to determine the consistency of subject indexing within each of three major agencies contributing to OTS" (OTS, the Office of Technical Services, is now known as the National Technical Information Service). "The consistency of indexing was determined by re-indexing reports and comparing the first indexing with the second. . . . It was found that each system . . . averaged 60 to 70 per cent consistency in indexing" (4). As another part of this study, Painter found only 30% equivalency between indexing systems. This would indicate that each organization had a fairly unique thesaurus of terms.

In Painter's study, equivalency means the use of the same term or its synonym in the two or more thesauri. That only 30% equivalency existed between three government agencies that publish indexing and abstracting journals points to a significant problem in attempting to evaluate any subject indexing.

Appendix IV to Painter's report shows comparisons of indexing of identical reports. Two examples are given in Table 4. The example at the top shows "similar indexing." The example below is meant to show "divergent indexing."

Painter does not attempt to make any judgment about what is good or what is bad indexing. Only consistency and equivalency are stressed. Painter concludes her report by saying (4):

*"A high degree of consistency is really the foundation upon which the effectiveness of the rest of the study is based. The value of equivalency studies and most particularly the table of equivalents presuppose the consistency of indexing. Convertibility between systems is thus dependent on the consistency of indexing. Without consistency, the vocabularies as units are not sound; equivalencies can-*

*not be drawn or effectively used for convertibility. Each of the solutions or answers to raising the rate of consistency is currently feasible in all systems. They are possible as immediate objectives and should be aimed at for quality within the individual agency's program even without consideration of convertibility with others."*

A fifth study showing comparisons of indexing identical articles was done by Bloomfield and Schafer (5). The Bloomfield and Schafer study compared several different indexing and abstracting publications. Five articles were selected, each of which had been indexed in publications such as *Chemical Abstracts*, *Nuclear Science Abstracts*, *Engineering Index*, *ASTIA\* Technical Abstract Bulletin (TAB)* and *Physics Abstracts*. In addition KWIC indexing was prepared for each article manually. This study attempted to compare the indexing among several indexing tools and a manually prepared KWIC index for identical documents. However, only one example from that paper appears here and that as Table 5. This example is indicative of the five examples given in the full paper.

The five examples chosen for the study were chosen only on the basis that each document would be found in several indexing journals. As these articles were not found in a KWIC index, indexing was manually prepared for each article, using *Chemical Titles* as a guide for format and forbidden words.

The index terms were developed by first using the abstract as a guide to determine an arbitrary list of terms. Once one of these terms was located in the subject index of an indexing journal, all the subject indexes of the other indexing journals where the article was found were checked for that specific heading. Therefore, when a dash is used in Table 5 (meaning no entry), it is certain that that term does not appear in that particular indexing journal.

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\* Now known as Defense Documentation Center.

Table 5 shows the indexing used by the four indexing journals together with KWIC generated terms. From Table 5 it can be seen that all the indexing journals used **Alkali Metals** as an index term, while the KWIC program used the term **Alkali**. Three of the indexing publications have no entry covering the concept of thermodynamic properties in an article dealing with the calculation of thermodynamic properties of alkali metals. *Chemical Abstracts* used the terms **Heat**

**Content** and **Thermodynamics**. The KWIC program generated far more terms than any of the other indexing journals. Because of the method by which KWIC terms are generated, KWIC scored very high in the number of terms generated.

Table 5 shows that there is a lack of effective rules or principles for indexing. It seems to be difficult to provide any rational explanation for such widely different patterns of indexing. The inconsistency apparent in Table 5 was charac-

**Table 5. Indexing for the Title: Calculation of Thermodynamic Properties and Construction of Enthalpy-Entropy Diagrams for Alkali Metals (5).**

<u>Chemical Abstracts</u>	<u>Nuclear Science Abstracts</u>	<u>Engineering Index</u>	<u>ASTIA TAB</u>	<u>KWIC</u>
—	—	—	—	ALKALI
ALKALI METALS—THERMODYNAMIC PROPERTY CALCULATIONS FOR (See also Sodium, etc.)	ALKALI METALS—THERMODYNAMIC PROPERTIES AND ENTHALPY-ENTROPY DIAGRAMS (See also Cesium, Francium, Lithium, Potassium, Rubidium, Sodium)	ALKALI METALS (See also Cesium, Lithium, Sodium, Thermoelectricity)	ALKALI METALS (Alkali Metals; Vapors; Thermodynamics; Enthalpy; Entropy; Pressure; Mathematical Analysis; Theory)	—
—	Diagrams, See Constitution Diagrams	—	—	DIAGRAMS
Enthalpy; See Heat Content	<u>ENTHALPY</u>	Enthalpy; See Thermodynamics	<u>ENTHALPY</u>	ENTHALPY
<u>ENTROPY</u>	<u>ENTROPY</u>	Entropy; See Thermodynamics	—	ENTROPY
HEAT CONTENT—ENTROPY OF ALKALI METALS	Heat Content; See Enthalpy	—	<u>HEAT CONTENT</u>	—
<u>METALS</u>	<u>METALS</u>	—	—	METALS
THERMODYNAMICS—CALCULATIONS OF, ALKALI METALS (See also headings for specific properties as Entropy, Free Energy, Heat Capacity)	<u>THERMODYNAMICS</u>	<u>THERMODYNAMICS</u>	<u>THERMODYNAMICS</u>	THERMODYNAMIC

Key: — term was not used in the indexing tool.

Enthalpy—terms using lower case letters are "See" references.

METALS—term was found in the indexing journal but not used to index this paper.

METALS—term was found in the indexing journal and used to index this paper.

teristic of the other four examples from the Bloomfield and Schafer study but not shown here.

Table 5 shows that both *Nuclear Science Abstracts* and *Chemical Abstracts* use the device of phrase modifiers in conjunction with the formal indexing term. This provides the user a better grasp of the subject content of the article being indexed. The KWIC program is meant to include the title with the index term which is as useful as phrase modifiers.

The index terms are shown in Table 5 in capital letters while the cross references and other syndetic components are shown in lower case letters. Terms which are part of the indexing vocabulary of the publication, but which are not used to index this article, are indicated by underlined capital letters. Under the term **Alkali Metals** in the ASTIA column, are a list of other ASTIA descriptors which are used for machine searching only. Since these terms are not used in the published index, they are not considered to be valid index terms. Of the total of eight descriptors given by ASTIA, only one is used to index this article in the printed subject index to its *Technical Abstract Bulletin*.

The "See" and "See also" cross references used by the various indexing journals vary widely in their structure. The term **Alkali Metals** has "See also" references in three of the four indexing journals. Only ASTIA did not use a cross referencing system in its printed subject index. Only *Nuclear Science Abstracts* and *Chemical Abstracts* employ the device of phrase modifiers after the subject term. The term **Enthalpy** is included with the indexing vocabularies of both *Nuclear Science Abstracts* and *ASTIA Technical Bulletin*, but the article was not indexed in either publication under this term. *Chemical Abstracts* uses a "See" reference to **Heat Content**, while *Engineering Index* uses a "See" reference to refer the user from **Enthalpy** to **Thermodynamics**.

The aim of the Bloomfield and Schafer study was to compare various indexing methods, examine the index sets used to express common subject content for

identical documents, analyze the results and endeavor to find some logical pattern for the art of indexing. The conclusion of the study states (5):

*"While no fundamental principles are apparent, it is evident that some indexing systems are more rewarding to the user than others and are easier and simpler to use. The effect of the indexing system on the vocabulary (and syndetic apparatus) chosen to describe information content was briefly looked at; a further, more quantitative program would certainly be of interest."*

The studies reviewed in this paper indicate a divergence of indexing assignment by both manual and machine methods. An attempt to find some pattern in the comparisons given is impossible. There is no underlying consistency in the way indexing is done. None of the authors reviewed here assigned numerical values to their comparisons to evaluate indexing quantitatively. These studies do indicate the complexity involved in defining criteria for the numerical evaluation of indexing and the difficulty in preparing the numerical evaluation of indexing and preparing rules for the consistent assignment of index terms.

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# Biomedical Libraries in Southeastern Michigan

## Administrative and Service Relationships

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■ Society has established an array of institutions for health care, research and education. Since 1964, Wayne State University has studied the availability of library services in providing access to the scholarly record for health professionals of Southeastern Michigan. Several investigative approaches were used to determine: 1) what groups of the biomedical

professionals have library service, 2) the extent of services, 3) the cost of minimal access service on a community basis, and 4) the means to create administrative mechanisms to improve and develop library networks. The investigative methods used and their adequacy in producing management and planning data are discussed.

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THE PRESIDENT'S COMMISSION on Heart Disease, Cancer and Stroke (1) stated that:

*Inefficiency in the medical library network creates an insidious ignorance which neither science nor the practice of medicine can condone. It results in the unplanned and unnecessary duplication of research efforts. It postpones the application of new knowledge potentially important to the alleviation of human suffering.*

The implications of this statement are easily recognizable. *First*, the proliferation of knowledge in the biomedical sciences requires biomedical professionals to have access to the scholarly record of medicine if the immediate health demands of the nation are to be met. *Second*, the variation in function, services and size of biomedical libraries of the

nation makes necessary a biomedical library system or network. *Third*, the lack of objective data about biomedical libraries requires investigation into their operations, as well as investigation regarding composition of the biomedical community having access to library service.

A system or network is a unit of diverse parts with a common purpose joined in regular interaction. When this definition is applied to biomedical libraries, they, struggling to emerge as a network, whether it be national, regional or local, are faced with the realization that this entity which deals with men, devices and documents must function as a social institution.

Most studies and surveys made with the intent of improving library services are designed to make judgments about individual institutions. These data are difficult to generalize in making plan-

ning and management decisions about library systems. Meeting the needs of health care personnel of a community must, out of necessity, involve all the biomedical libraries in the community. With this in mind, Wayne State University Medical Library (WSUML), the Detroit Medical Library Group, the Wayne County Medical Society and the Greater Detroit Hospital Community Council began in 1964, as a cooperative venture, the study of the availability of library services for health professionals in Southeastern Michigan. The specific aims of this project are to study 1) the relationship between the individual and his institutional source of literature, and 2) the relationship between institutions' information services.

### Methods and Perspective

During the past six years 56 in-house reports have been produced by 20 different investigators. All aspects of the investigative project are directed toward establishing a basis for action through analysis of data that link existing institutions toward a viable network. This perspective places constraints on the methods that can be used. First, any data collected must involve on-going institutional operations. If the objective is to cause change, two aspects must be known, that which is to be changed and the goal which is to be accomplished. This limits the method of collecting data. The study of on-going operations requires that data be gleaned from records generated to support an action or event, or collected at the time the action is occurring. A second constraint placed on data collection is that it be designed to be done within existing routines because investigators must depend upon the willingness of many individuals and institutions to collect data on themselves for analysis. More important, data collecting that requires unusual efforts to accomplish disturbs the routines of communication. Finally, analysis of data must result in conclusions that have meaning to the individuals and institutions being studied. From the outset it was recognized that if

planned changes in institutions are to result from study, those who implement the changes must be involved with the planning and management.

### Results to Date

No effort will be made here to summarize the results of all 56 individual studies or to describe specific methods used. The aim in this paper is to select some of the results which support our present thoughts about the planning and development of a biomedical library network.

**The Universe of Study.** One of the first requirements was to determine what institutions and individuals could be studied. There are 112 health related institutions in Metropolitan Detroit. Eight are commercial, six are predominantly academic and four are essentially non-profit research institutions. The remaining 94 are community, proprietary, or government hospitals (2). Within these institutions are some 5,200 physicians, both MD and DO (3, 4), and almost 1,600 interns and residents (5). We are only beginning to identify the different nursing groups (6). The task of identifying other health professions, researchers, and students is still ahead of us (7).

**Libraries and Their Services.** Although almost all biomedical institutions have what they call a library, the quality of the resources and services varies greatly (8). Since we were investigating the relationship of individuals to their institutional means to gain access to the scholarly record, we defined 33 specific user services that could be expected to be given by biomedical libraries. Forty-one librarians from the 112 institutions were interviewed to determine which of these services were provided and in what depth. It should be no surprise that no two institutions give the same complement of library services. However, all but 10 of the 33 services are provided by 50% of the institutions and all but 9 of the 10 services provided by less than half are given by at least 25%. For example, 60%

of the institutions do not route serials as a regular service, but 40% do (9). Viewed as a network, a question can be asked: If all services cannot be provided by all libraries, what services should be given in what order of priority? Knowing at least part of the user population, what will it cost to give these services dependably to everyone?

**The Physician Population.** Access to the scholarly record for all physicians which requires that they have access to an interlibrary loan service would appear to be essential. Five separate studies were undertaken to determine how many of the physicians, including interns and residents, have this library service available to them. The data was collected in 1967-68. The absolute numbers may have changed, but the general observations still hold. We found that 38 teaching hospitals and clinics maintain 170 postgraduate medical programs with 1,550 interns and residents. These 170 programs involve 178 affiliation agreements that require the interns and residents to spend some of their training in other than their parent institutions. Nine other institutions than the 38 teaching hospitals within Metropolitan Detroit, and four outside the geographic area, accepted these students for part of their training. The task of tracing this large number of student physicians among so many institutions, while mathematically possible, was not worth the expenditure in time to calculate. It is clear that interns and residents do have library problems because it is known that quality of service varies among these institutions (5, 10).

A more direct count could be made of practicing and research physicians. We acquired from the health related institutions their physician staff lists. From these lists we were able to plot where Detroit's 5,200 physicians worked. For example, we found that 4,400 MD's held 8,181 staff appointments in 79 hospitals. The 813 osteopathic physicians shared 1,860 appointments in 16 osteopathic hospitals. Knowing which of these institutions had a library providing an interlibrary loan service and knowing in which

institution each physician held an appointment, it was possible to determine that only 51% of Detroit's MD's had access to the scholarly record through this service. Only 40% of the osteopathic physicians had an interlibrary loan service available to them (3, 4, 8, 11).



We were able to manipulate these data in still another way. The distance between the hospitals was measured from a major teaching hospital to the other hospitals in which 209 physicians had appointments. Starting with assumptions on frequency of visits, it was calculated that 15% of the time of the 209 physicians is spent traveling (4). Although these figures are less than precise, combined with the requirement for mobility of the postgraduate medical students, there is the obvious conclusion that to improve access to the scholarly record for Metropolitan Detroit physicians demands the establishment of more libraries, or access points, with dependable services in all the institutions in which they work.

If more libraries and better library service is an obvious need, how can this be accomplished? We have undertaken several studies to investigate library operations with the expectation that data could be collected to provide information for decisions for the improvement of quality and the amount that libraries of the network can supply.

**Interlibrary Loans.** We have done more study on interlibrary loans than any other library service, not only because it is the easiest operation on which to collect data, but more important, it is the basic service for any library network. In 1966 over 13,000 interlibrary loans

were generated by 30 institutions of which 72% were filled within the network (12). If the same ratios exist in 1970 as in 1966, the interlibrary loan flow has doubled to over 25,000 transactions per year and a tripling of the number of institutions making such requests. We found that one-half these requests are generated by physicians, one-third by interns and residents, and the remainder by other health professionals. Interns and residents, on the average, request three items for every one requested by a practicing physician (7, 13). Because of the difficulty of defining the meaning of research in the many different environments, what the items were used for once received is not easy to determine; however, it is fairly clear from the data we were able to collect that about one-fourth of the requests were made by the user to support his role as a teacher or for his own continuing education. The remainder were used for patient care or for research purposes. Since such a large proportion of requests are needed for patient care, timeliness in delivery of documents becomes an important element of service (14). Rather extensive investigation was done on determining what aspects of the processing of an interlibrary loan are capable of being altered (15), and what means of delivery would be most expeditious (16). Although many would assume that the use of the telephone with messenger service would be the fastest way to deliver documents, in the quantities now being processed this is not the case. The U.S. mail, if requests and facsimile copies are sent First Class, is faster in 90% of the cases than telephone and messenger service, and obviously less expensive.

Interlibrary loan service is expensive. It was determined that the procedures for the borrowing part of an interlibrary loan transaction, if completed properly, cost almost four times as much as the lending part (17, 18). One would perhaps expect that in a network with established policies, the cost of processing interlibrary loans would not vary from library to library. Examining procedures in four libraries shows the cost to vary

by as much as 100% and these differences in cost are due almost entirely to differences in routine procedures (11, 19). If library housekeeping and routines are not kept at a dependable level, the ability to supply documents can vary as much as 5-10% (20).

A network is a cybernetic system. Changes in one unit affect the entire system. The need for dependability has been demonstrated again and again in our studies. One of the things we have learned is that there is no need to advertise good library service. There are, at least in the Detroit area, so many unmet information needs, that once a dependable service is established, the demand is constantly outstripping the means to provide it (21).

**Collections and Their Maintenance.** With 112 institutions, is it possible to share the task of collecting and processing resources? We have examined whether it is possible to identify core collections and their usefulness in supplying information as well as their ability to identify citations (22-24). Because the libraries, even though varying in detail in subject matter, do collect the same complement, investigations were carried out on the most economical and rapid ways to process and catalog materials using different bibliographic systems (18, 25-27).

**Further Institutionalization.** Our six years of effort have shown us that it is possible to study quantitatively elements of interlibrary activity (28). We are beginning to define performance levels that, given certain assumptions, can be reasonably expected of biomedical libraries. We have started the task of translating these expectations into manpower and resource requirements. Data are available to demonstrate that changes are mandatory in the present institutional structure if improved information services are to be provided a biomedical community. If the assumption is accepted that further institutionalization through the formation of stronger network interdependence is a rational way to proceed, how are changes to be initiated and how are



they to be monitored so that the changes are lasting and beneficial? As stated earlier, a network is a social institution, not a technical device or a procedural mechanism. When examined in detail as we have, it is astonishing to discover the amount of interinstitutional service that is provided based entirely on good will and a policy of institutions to make community contributions.

The prime factor that must be realized is that each institution has created library services to suit its particular needs and has built a facility that it feels it can afford. As a library develops it takes advantage of the network services to the extent it can. A second factor is that there is no overall official organization to monitor or a single administrative unit to make decisions on procedures. Thus, even though the knowledge is available to improve networks for the biomedical community, the number of ways available to incorporate this knowledge into the social structure is limited:

**1. Central administration.** If some legal device is created either through social legislation or through agreement, authority can be established in an administrative body to set performance levels and rules to accomplish them. An alternative

mechanism is that one institution assume leadership because of its resources, either human or material, which can then establish standards which institutions must follow. Both such means have been used; unfortunately they have not been operationally dependable because the participants of a network have little control over the factors required to maintain them.

**2. Technology.** The second approach to integrate network knowledge into library services has manifested itself mainly in exploratory papers and dreams—the use of new technology. The day may not be in the too distant future when we shall have the entire scholarly record maintained in some electronic form which we can consult as easily as we now use a telephone. To accomplish such a goal would require the manpower and resources of a major war. Our civilization still has a preference for the utilization of resources for conflict.

**3. Evolving organization.** The requisites of a network are: 1) that all institutions make a contribution towards its functioning; 2) that they have recognizable responsibilities for its maintenance; and 3) that a communication mechanism exist so that the separate units can supply input. These attributes can be ascribed

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to a centralized hierarchical organization as mentioned above, but this is not an organizational requirement. Biomedical institutions and the professions working within them have a tradition of ethical standards providing an opportunity for self determination and self monitoring. However, library network functioning must, as it grows in complexity, involve more formality than just laissez-faire monitoring by specialized groups.

Investigative work on what the social and political constraints are in the formation of an interdependent unit is very limited. As with most administrative organizations, a pragmatic approach is probably the only feasible one. Certainly our data would indicate that some formal agreement which institutions can sign is a prerequisite. This agreement need not be a legally binding document, but it can serve as a device to insure that operational goals are compatible and not beyond the means of separate institutions to attain. Just as important, the agreement must contain a means for evaluating the accomplishment of goals and procedures. Without the evaluations, dependability of operation is hard, if not impossible, to achieve. Above all, an attitude must prevail that no one institution is better than another; a viable network

must accept variations so long as the general goals are not compromised.

Some of the knowledge we have acquired has already been incorporated into the fabric of the biomedical library network in Southeastern Michigan. Steps are being taken to make the network more cohesive. Continued study is a necessary element for its continued growth.

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Dr. Pings is medical librarian and Mrs. Cruzat is reference librarian of the Medical Library, Wayne State University, Detroit, Michigan. Presented as a contributed paper, Session B, on Jun 9, 1970, during SLA's 61st Annual Conference in Detroit.

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## CHAPTERS & DIVISIONS

**Baltimore**—The Chapter met at Evergreen House, Garrett Library, on Nov 19 to hear Elizabeth Baer speak on "History of Evergreen House and the Library Collection" and Dorothy Miner speak on "Care and Preservation of Manuscript Materials."

**Colorado**—Herbert Koller, Executive Director of ASIS, spoke to the Chapter on Nov 12 on "Conversation Confidential" (1971 ASIS Convention in Denver). A Christmas party was held Dec 11.

Virginia Boucher, University of Colorado, will discuss "The Interlibrary Loan Code" on Jan 13. "Communication Games" will be considered by James Seed, Dow Chemical, on Feb 10. James Foyle, University of Denver library school, will discuss "Advances in Librarianship, 1960-70" at the Mar 10 meeting. The Apr 14 meeting will present a review of book subscription jobber services, present and future, and May 12 will be the annual Chapter meeting.

**Dayton**—At a dinner meeting on Dec 4, the Chapter program considered "The Paper Blizzard: A Discussion of Federal Information Resources."

**Illinois**—Nov 18 was the date of a joint meeting with the Chicago Association of Law Libraries. Dallin H. Oaks, Executive Director of the American Bar Foundation, spoke on "Research at the American Bar Foundation."

**Michigan**—The Chapter held a joint meeting with ASIS on Nov 11. Future programs include a television program on "Procuring Government Documents" from the 1970 SLA Annual Conference on Feb 17, Management Night in April, and the Chapter's annual meeting in May.

**Minnesota**—Carlos Cuadra, System Development Corp., considered "On-Line Systems" at the Nov 3 meeting. On Nov 17, David Hines, IBM, spoke on "Computerized Liter-

ature Searching." A program on "Solving Library and College/University Personnel Problems" was held Nov 27 and 28 in Miami Beach. Dec. 11 was the Chapter's Christmas party.

**Montreal**—A workshop on Work Improvement Principles was given Oct 17 by John Williams, systems coordinator for McLennan Library of McGill University. The seminar was directed towards the solution of library problems, but the principles and methods were of a general nature.

Florine Oltman was the Chapter's special guest at a dinner meeting on Nov 11.

Meetings scheduled for 1971 will include a January panel discussion on interlibrary loan policies, a February workshop on libraries as total information centers, a Mar 16 joint meeting in Ottawa with CAIS, and a May annual meeting.

**New York**—Hillary Waugh, leading American mystery writer, addressed the Chapter on Oct 20 concerning police handling of crime.

A gala Christmas cocktail party was held Dec 17 in the Medieval Sculpture Court of the Metropolitan Museum of Art.

The Chapter is planning a seminar on library planning for Apr 23, 1971. Those interested may contact Ellis Mount, Columbia University, Engineering Library, 422 S.W. Mudd, N.Y. 10027.

*The Advertising and Marketing Group* heard John Rothman of *The New York Times* speak on the *Times'* new information retrieval project on Nov 17.

The international position of the dollar was considered by Thomas O. Wagge, Federal Reserve Bank of New York, at a meeting of the *Business and Finance Group* on Oct 28.

*The Newspaper and News Group* met at the Television Information Office Oct 14 to hear Henry Levinson, Manager of TIO's Station Services, give a slide lecture presentation—"Here They Come Again"—on the

freedom and responsibility of the information media. The Group was also able to see the operation of TIO's Termatrex information system.

On Oct 7 the *Publishing Group* heard Ted Slate, *Newsweek*, give a slide presentation about the operations and services of the *Newsweek* Library. He introduced the concept of management-oriented report writing as a technique for information managers.

**Princeton-Trenton**—The Chapter met on Nov 12 at the Educational Testing Service to hear Robert Cawley, assistant director for research administration, Western Electric Co., speak on management's needs for library fulfillment, present and future. Mr. Cawley is also Mayor of Princeton Borough.

**Southern California**—At a dinner meeting on Nov 18, the Chapter heard Robert Shisko of RAND Corp., co-author of *Systematic Analysis of University Libraries*, speak on "Cost Benefit Analysis for Libraries." Joseph P. Newhouse, also from RAND, spoke on "Beverly Hills Public Library—A RAND Study." A scholarship fund raffle and dinner party was held Dec 10.

**Texas**—In conjunction with AFIPS' FJCC, the Chapter's Documentation Group sponsored the first public demonstration of the NASA RECON data retrieval system at a seminar, "Systems and Society," on Nov 20. On Nov 21, the Chapter toured the *Houston Post's* new plant.

**Toronto**—"Library Design" was the topic of a meeting held Nov 19 at the Ontario In-

stitute for Studies in Education. Margaret Beckman, University of Guelph, and L. S. Langmead, architect, addressed the Chapter, followed by a tour of the OISE library.

**Virginia**—The campus of the University of Virginia was the scene of the Oct 24 meeting. The Chapter toured three of the University's special libraries: the Business Administration Graduate School Library, the new Fine Arts Library, and the Engineering Library. Ray W. Frantz, Jr. and Kenneth Paterson, both of the University of Virginia Library, were the Chapter's luncheon guests.

**Washington, D.C.**—A joint meeting was held Dec 8 with the Potomac Valley Chapter of ASIS. Col. Andrew A. Aines, Office of Science Technology, Executive Office of the President, spoke on "Recent Developments in the Office of Science and Technology and COSATI." The Picture Group toured the Air and Space Museum at FAA earlier in the day.

**Wisconsin**—On Oct 22, Dr. Paul B. Henderson, director of Systems and Data Processing at Allis-Chalmers, spoke on computer possibilities for libraries.

The Nov 6 meeting featured a video-tape of the panel discussion on obtaining government publications held at the 1970 SLA Annual Conference.

On Feb 23, 1971, the Chapter will be 40 years old. The January meeting will be an anniversary party in honor of this event. Mar 1 will be a joint meeting with the Wisconsin Microfilm Association and the American Records Management Association.

## MEMBERS IN THE NEWS

The George C. Marshall Research Foundation Library, Lexington, Va., is open for research. **Eugenia D. Lejeune**, the library's archivist-librarian, has described the creation of the library in the Summer 1970 issue of the Library's *Newsletter*.

**Mrs. Dorothea R. Neilson**, librarian at Ketchum, MacLeod & Grove in Pittsburgh, Pa., retires on Dec 31.

**Valerie Noble**, whose book *The Effective Echo: A Dictionary of Advertising Slogans* was recently published by SLA, was featured in the November 1970 issue of Upjohn's Kalamazoo Edition of *Intercom*.

**Ruth H. Phillips**, formerly public library consultant, Virginia State Library, has been appointed assistant director, Division of Libraries, Department of Community Affairs and Economic Development, Dover, Del.

**Frank H. Spaulding** . . . promoted to head of the Library Operations Department, Bell Telephone Laboratories, Murray Hill, N.J.

**Roy Swanson**, St. Paul's Dispatch-Pioneer Press, was knighted in special ceremonies marking the 88th birthday of King Gustaf VI Adolf of Sweden. His citation read: "For your long-standing efforts to further the image of Sweden in the Upper Midwest."

**Everett M. Wallace** recently joined the staff of University of California, Riverside, as systems librarian.

The University of Southern California School of Library Science offered an upper division course in library science this fall on television, under the direction of **Martha Boaz**, dean of the School. Known as "Odyssey," the program featured many SLA members, including: **Jack**

**Ramsey** (Glendale Public Library), **Richard D. Johnson** (Honnold Library, Claremont), **James C. Jackson** (Long Beach Public Library), **Edmund G. Hoffman** (Water and Power Div. Municipal Reference Dept., Los Angeles Public Library), **Rocco Crachi** (Jet Propulsion Lab.), **Frank R. Long** (USC School of Library Science), **Len Waldron** (The RAND Corp.), **Elizabeth Crahan** and **John M. Connor** (Los Angeles County Medical Association Library), **Sherry Terzian** (The Neuropsychiatric Institute, UCLA), **Marlys Cybulski** (Narisco, Division of North American Rockwell), **Elizabeth Walkey** (Bell and Howell Research Labs.), **Patricia Del Mar** (Long Beach Public Library), **Donald V. Black** (System Development Corp.), **Phyllis Dalton** (Assistant State Librarian of California), **Edythe Moore** (The Aerospace Corp.), **Andrew H. Horn** (Dean, School of Library Service, UCLA), **Lucille Whalen** (Dean, School of Library Science, Immaculate Heart College), and **James Humphrey III** (H. W. Wilson Co.).

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### Joseph P. Desmond

The long and productive professional career of one of the most respected librarians and bookmen of western New York came to a sudden end when a traffic car accident took the life of Joseph P. Desmond on Jun 27, near Buffalo, New York.

At Cornell Aeronautical Laboratory of Cornell University, Buffalo, New York, where he was Head Librarian since 1957, Joe Desmond worked in an atmosphere of devotion, love, and respect that usually surrounds an eminent savant. For his staff he was much more than an able administrator and manager—he projected the charismatic image of an understanding father and most patient teacher.

Mr. Desmond was the former president of the Western N.Y. Library Resources Council and for ten years a member of the Board of Trustees of the Buffalo and Erie County Library System. As a member of the N.Y. State Commissioner of Education Committee on Library Development, he prepared that Committee's position papers on

the role of special libraries in library systems. He had also served as a library consultant to the Institute of Aerospace Sciences, University of Toronto, and as advisor to Arthur D. Little, Inc., in its study of the N.Y. State Reference and Research Library Resources Program. A native of Buffalo, he was a graduate of Canisius College, with honors, and received a master's degree in Library Science from the University of Michigan.

Prior to World War II, he was librarian at Canisius College where he also taught English. From 1947 to 1951, he operated the publishing firm of Desmond and Stapleton.

Mindful of the beautiful words of the *Desiderata*, it can be said of Joe Desmond that he walked "placidly amid the noise and haste," spoke the "truth quietly and clearly," avoided "loud and aggressive persons," and, especially, did not "feign affection." May he, therefore, rest as gently as he lived "at peace with God."

Mr. Desmond was a member of SLA since 1961.

STANLEY A. ELMAN

### William F. Jacob

William F. Jacob, Past President and long-time member of SLA, died Nov 26, 1970.

Mr. Jacob joined Special Libraries Association in 1918 and became active on various committees. He was chairman of the first Census Committee which laid the groundwork for the first *Directory of Special Libraries in the United States*. He served as Vice President of the Association in 1925-26 and again in 1935-37, succeeding to President in 1937-38.

During his tenure as President, Mr. Jacob noted two accomplishments he felt were important to SLA: 1) The first *Trade Names Index* was published; 2) It was the first year SLA Vice-Presidents were assigned definite executive responsibilities in Association affairs.

A native of Brooklyn, Mr. Jacob graduated cum laude in 1916 from Brooklyn Polytechnic

Institute. During his college years, he served as a member of the Engineering Societies Library Staff, and he continued there after graduation. While assistant to the librarian, he organized the Library Service Bureau.

In 1917 Mr. Jacob went to General Electric Co., Schenectady, N.Y., as head librarian, where he remained until his retirement in 1954. He was the company's first technically trained librarian, and it was under his management that the plant's main library was organized and developed.

Mr. Jacob was a member of various Masonic bodies, honorary societies, and organizations, including the American Library Association. He was also listed in *Who's Who in Engineering*, *Who's Who in the East*, *Who's Who in Library Service*, and *America's Young Men*.

OLIVIA YUNKER

Errata  
Salary Survey  
(Special Libraries, Jul/Aug 1970)

p.333, col.1, line 25	Change 33% to 23%
p.335, Table 2, line 5	Change 22% to 23%
p.335, Table 2, line 7	Change 20% to 26%

## LTP Reports to SLA

Agreements have been signed for two equipment testing programs, one for cassette tape recorders, the other for microform readers. The test program for cassette recorders is not a new program but is based on previous LTP testing of audio equipment. One objective will be to determine whether or not the higher price of certain models is justified in terms of higher fidelity of sound reproduced, durability of the unit as a whole, or longer life. The machines chosen for testing are of the heavy duty type specifically designed for institutional use.

Six of the eight microform readers included in LTP's most recent test program are of the low-cost personal or portable type, of which many new models have recently been introduced. These include: Du Kane's Explorer II Microfiche Reader; Micro Design's COM 150; Micro Image Corporation's MICRA 210; National Cash Register's NCR 456-300 Portable Microfiche Reader; Washington Scientific Industries' Microfiche Reader Model MF; and the DASA Microfiche Reader PMR/50. University Microfilm's 1212 Reader is being tested by the National Reprographic Centre for documentation (NRCd) in England.

The remaining two machines being tested are the Recordak Motormatic Reader, Model MPG and the Information Design Microfilm Reader. Both machines are quite new, have motorized film transports, and are considerably more expensive than the other machines being tested. The Information Design Reader has an especially large screen.

The 3M Executive reader-printer will be evaluated at the earliest possible date. The Executive is said to be capable of producing positive hard copy from either negative or positive microfiche. Results of this test and that on the UM11414 microfilm reader, carried out by the National Reprographic Centre for documentation (NRCd), are scheduled for publication in a forthcoming issue of *Library Technology Reports*. The Centre and *Library Technology Reports* have a standing agreement which permits each to

reprint the other's evaluative reports on microform equipment on a one-to-one basis.

The September 1970 issue of *Library Technology Reports* published more reports on plastic chairs suitable for general seating in libraries. The chair testing program is in the initial stages of ordering samples of wood library chairs, both with and without arms, preparatory to actual testing. Present plans call for testing more than 30 models currently offered in the library market nation-wide.

An evaluative report of the new model of the Olivetti Coinfax copier was also published in the September issue.

A survey of all electronic theft detection systems at present being marketed in the United States is available from *Library Technology Reports*. The survey, made in the summer of 1970, gives information about the following systems: Checkpoint, Knogo, Sensomatic, Sentronic, and Tattle Tape. Manufacturers answered such questions about their product as: How does the system work? What is the unit cost of sensitive material used? How is the sensitive material attached or installed in the book? Can it be easily removed by the library to be reused? What is the cost of the detection device? Is it possible to trigger a false alarm? What manual procedures are involved in its use? Cost of this single issue on theft detection systems is \$20.00.

Two early books written by William Hawken will be removed from LTP's list. They are *Photocopying from Bound Volumes* and *Enlarged Prints from Library Microforms*. Most of the equipment mentioned in the second title is now off the market and the discussions of the processes are included in a later LTP publication, *Copying Methods Manual*. A similar situation exists with *Photocopying* and its supplements Nos. 1 and 3.

The LTP advisory committee has a new chairman. He is Russell Shank, director of libraries at the Smithsonian Institution, who will serve as chairman 1970-1971, and as a committee member until 1972.

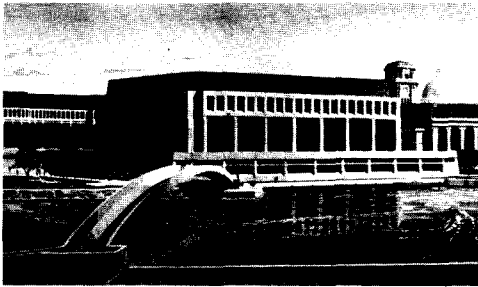
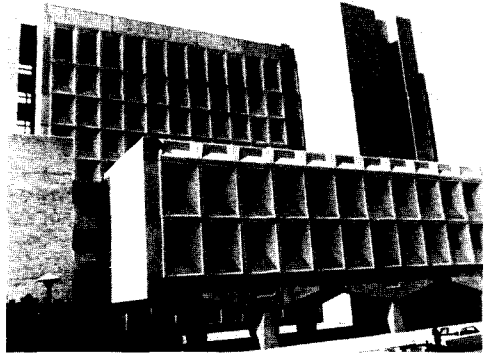
Mrs. Marjorie E. Weissman  
LTP/ALA, Chicago 60611



## Library Construction

An underground library is part of a classroom and laboratory facility located on New York University's University Heights campus. The library is situated beneath a raised, open plaza.

The building, one of the first uses in New York City of pre-cast reinforced concrete panels serving as load-bearing walls, was chosen as the outstanding concrete building of 1969 by the Concrete Industry Board of New York.



Granite and glass will constitute the exterior of the new library presently under construction at the U.S. Naval Academy, Annapolis, Md., and scheduled for completion in the fall of 1972.

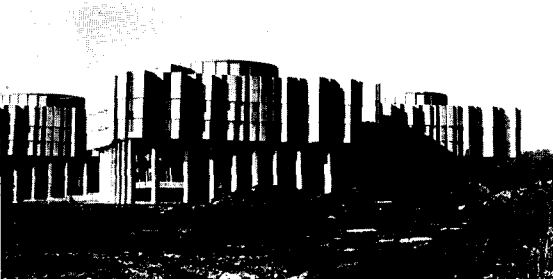
Features include faculty studies, electronic carrels, computer terminal rooms, typing rooms, and booths with electronic calculators. The interior is constructed on the modular plan in order to provide for future changes and requirements.

The visual impact of Northwestern University's new library (Evanston, Ill.) is unmistakable. Three research towers, each devoted to a different discipline—social sciences, history, and the humanities—surround the core library which houses titles selected by the various departments

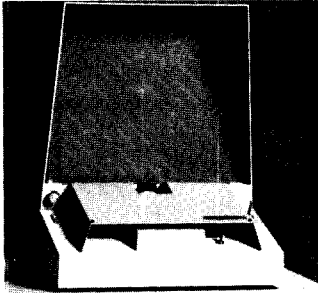
Space for research and study is provided by specially designed bent-wood study carrels located among the book stacks. Constructed of Forbon vulcanized fiber, the carrels are strong, yet lightweight enough to be easily moved.

The new technical library under construction at the U.S. Naval Postgraduate School, Monterey, Calif., is especially designed to eliminate external distractions from a nearby airfield. The utilization of natural concrete is said to result in virtually soundproof walls.

Architectural features of the library include curved corners, a wide skylight over the central stairwell, and banks of narrow, angled windows over the library's two entrance doors.

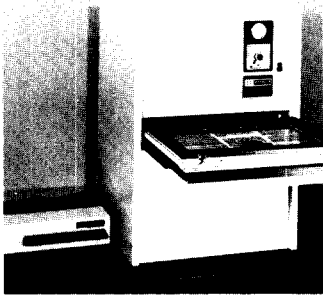


## HAVE YOU SEEN ?



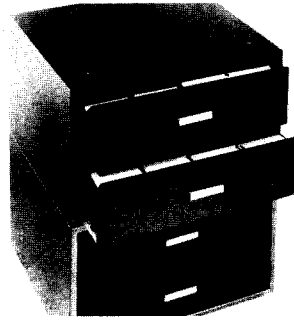
A microfilm reader features a three-lens turret that offers 29 $\times$ , 34 $\times$ , and 43 $\times$  magnifications. The Recordak Motormatic MPG-TH has a cover plate over the film-drive mechanism and a solid-state lamp-voltage control to allow adjustment of the image. The viewing screen measures 14 $\frac{3}{4}$ "  $\times$  16 $\frac{1}{2}$ " and the reader accepts 16mm or 35mm microfilm. For information, write: Eastman Kodak Co., 343 State St., Rochester, N.Y. 14650.

An all-purpose folding utility cart is constructed of 1" tubular chrome-plated steel and is strut braced for heavy load use. The Versacart accommodates two 6" or 12" deep baskets which can be interchanged with other cart accessories. For information, write: Lumex, Inc., 100 Spence St., Bay Shore, N.Y. 11706.

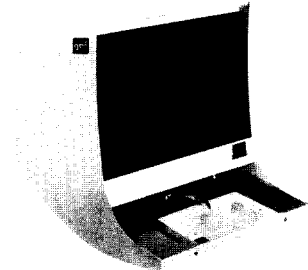


Two microfiche printers are part of Micro-Scan's line of microfilm equipment. Model MS 10 can simultaneously expose up to nine 4"  $\times$  6" fiche; Model MS 20, with a twin exposure system and double-sided vacuum frame, simultaneously exposes up to eighteen 4"  $\times$  6" microfiche. A vacuum frame ensures

even contact, mercury vapor lamps keep exposure times short, and a self-resetting timer activates an automatic frame ejection system. The printers have 12"  $\times$  18" exposure areas. For information, write: Micro-Scan Systems, Inc., 54 S. Main St., Pearl River, N.Y. 10965.



Cassette filing cabinets are of modular design to permit lock-stacking. The one drawer cabinet Model No. CAS (\$50) stores 174 cassettes; the two drawer Model No. 2-CAS (\$75) stores 348. The drawers have full extension arms for easy access to back of rows. Constructed of heavy gauge welded steel, the cabinets are available from H. Wilson Corp., 555 W. Taft Dr., South Holland, Ill. 60473.



A microfiche reader is designed for computer output viewing applications. With a screen size of 11 $\frac{1}{2}$ "  $\times$  15 $\frac{1}{2}$ " and either 24 $\times$  or 42 $\times$  magnification, the reader accepts standard fiche sizes and aperture card formats and has a variable index coordinate to handle any type of microfiche. The screen of the GAF 7502 tilts 10 degrees and has a high-low intensity switch to give exact brightness desired. For information, contact: GAF Corp., 140 W. 51st St., N.Y. 10020.

## HAVE YOU HEARD ?

### Conference Record Published

The National Federation of Science Abstracting and Indexing Services announces the publication of the *1969 Conference Proceedings* (\$10.00) and the *1970 Conference Digest* (\$7.50). Order from: NFSAIS, 2102 Arch St., Philadelphia, Pa. 19103.

### Study of Lighting

*Library Lighting* has been published by the Association of Research Libraries with a grant from the Council on Library Resources. The study, which considers major lighting problems in a nontechnical manner, was written by Keyes D. Metcalf and is available for \$2.00 from ARL, 1755 Massachusetts Ave. N.W., Washington, D.C. 20036.

### Training Institute

The first annual Archives-Library Institute on Historical Research Materials will be held Feb 1-12, 1971 in Columbus, Ohio. Tuition for the two-week program is \$125, and it is sponsored by Ohio Historical Society, Interstate 71 and 17th Ave., Columbus, Ohio 43211.

### Microfilm Briefing

The National Microfilm Association held a State of the Industry Briefing on Dec 2 in N.Y. A panel addressed the participants on current trends in the information business. Particularly useful was the microform sampler included in the media kit with actual samples of the various forms of micro-publishing in use today.

### Colloquium Proceedings

The Proceedings of the 7th Annual National Information Retrieval Colloquium are available for \$15.00. Orders may be addressed to Alberta D. Berton, Medical Documentation Service, 19 S. 22nd St., Philadelphia, Pa. 19103.

### Medical Librarianship Internships

The Biomedical Library, Center for the Health Sciences, University of California, is offering three one-year traineeships in medical librarianship for the year beginning Sep 1, 1971. The internship consists of planned training in medical librarianship and formal academic coursework. For appli-

cations, write: Mrs. Lelde Gilman, Training Offices, Biomedical Library, Center for the Health Sciences, University of California, Los Angeles, Calif. 90024.

### Science Information Degree

The National Institutes of Health is sponsoring a program in Science Information to begin Sep 1, 1971 at Illinois Institute of Technology. Ten traineeship grants are offered for the program which will lead to the degree of Master of Science in Science Information. The trainees will receive a full tuition scholarship, a living allowance of \$2,400, plus \$500 per dependent. For information, write: Dr. Albert J. Brouse, Illinois Institute of Technology, Chicago, Ill. 60616.

### Economics Current Awareness

*Contents of Recent Economics Journals*, a weekly current awareness service covering all aspects of economics, begins publication in January 1971. The service will consist of facsimile reproductions of the tables of contents of about 140 scholarly journals. Subscriptions are available for £6 in the British Isles, £7-5s to other countries, from H M Stationery Office, P.O. Box 569, London S E 1.

### Mental Sciences Library Holdings

The Texas Research Institute of Mental Sciences Library, Houston, Texas, has compiled two lists which form a complete catalog of its holdings. *Author List of Books in the Texas Research Institute Library, March 1959-April 1970* and *List of Serial Holdings, February 1970* are available free from the librarian, TRIMS, 1300 Moursund, Houston, Texas 77025.

### Government Manual

The 1970/71 edition of the *United States Government Organization Manual* is available for \$3.00 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

### Michigan Serials

*The Union List of Scientific and Technical Serials in the University of Michigan Library*, 5th edition, may be purchased for \$10.00 from Business Services Division, Technical Services Department, University Library, the University of Michigan, Ann Arbor, Mich. 48104.

### Occasional Papers in Librarianship

Atlanta University has initiated a series of "Occasional Papers" which will be issued irregularly on various aspects of librarianship. The first paper, written by Casper L. Jordan, is titled *Black Academic Libraries: An Inventory*. Priced at \$1.00, the papers are available from Dr. Virginia L. Jones, Dean, School of Library Service, Atlanta University, Atlanta, Ga. 30314.

### American Indian Task Force

ALA's Social Responsibilities Round Table has created a new Task Force on the American Indian. The group's purpose is to change the condition of library service to the Native American both in the city and on the reservation. For information, contact: Charles Townley, American Indian Bibliographer, Library, University of California, Santa Barbara, Calif. 93106.

### Tarleton Law Library

A special report on the Tarleton Law Library at The University of Texas at Austin has been prepared by Roy M. Mersky, law librarian. The report describes major deficiencies of the library in regard to the collections, the physical facilities, and the staff. The report emphasizes the need for a continuing program of organized support.

### Portable Microform Reader

The Xerox 2240 Microforms Reader, for viewing 35mm and 16mm roll microfilm, weighs only 15 pounds and occupies less than a square foot of desk space. A microfiche indexer can be attached for viewing microfiche and other sheet-film transparent microforms. The reader is priced at \$159.00.

### Bibliography

*A Selected Bibliography on Homosexuality*, 4th edition, 1970-71, is available for 25¢ from Homosexual Information Center, 3437½ Cahuenga Blvd., Hollywood, Calif. 90028.

### University of British Columbia

Roy B. Stokes, Head of the School of Librarianship, Loughborough College of Technology, has been appointed Director of the School of Librarianship, University of British Columbia. He will succeed Samuel Rothstein, the School's founder, who will remain at the School as Professor of Librarianship.

### Essay Award

Mrs. Kay Olschner, University of North Carolina, Chapel Hill, received the Murray Gottlieb Prize for her essay, "Pre-Civil War Journals in Louisiana," which will be published in the *Bulletin of the Medical Library Association* during the next year.

### Columbia Library School Dean

Richard L. Darling has been appointed dean of Columbia University's School of Library Service to succeed Jack Dalton, who has begun a special project in improved library service to the disadvantaged. Dr. Darling was formerly library and educational materials director for Maryland's Montgomery County public school system.

### Science Bibliographic Service

*Medical Book Finder* is a bi-weekly loose-leaf bibliographic service that provides data on books published in the English language that relate to science. The service is priced at \$50.00 per year, including three cumulative subject indexes, and is available from Arthur Brickman Associates, 411 15th St., Miami Beach, Fla. 33139.

### Computerized Libraries

A special panel of the Computer Science and Engineering Board of the National Academy of Sciences is undertaking an 18-month study of computer applications to libraries. The study, supported by the Council on Library Resources, will analyze both computer-based and conventional library activities in order to determine the most appropriate application of automated technologies to library and information services.

### Micrographics Service

An information service, *Micrographics News & Views*, publishes a bi-weekly report and analysis of events in the micrographics industry. The subscription price is \$95 a year, from Micrographics News & Views, P.O. Box 2642, Palos Verdes Peninsula, Calif. 90274.

### Harry S. Truman Library

Available from the National Audiovisual Center, General Services Administration, Washington, D.C. 20409, is a motion picture, *For All the People: The Harry S. Truman Library*.

### **Oil Spillage Bibliography**

A comprehensive bibliography on the subject of Water Pollution by Oil Spillage has been published by Industrial Information Services. Volume I, covering 1964–Jan 1969 costs \$20 for members, \$30 for non-members; Volume II, covering Jan 1969–Oct 1969, is \$30 for members, \$40 for non-members. The complete set is priced at \$50 for members, \$60 for non-members, and is available from IIS, Southern Methodist University, Science Information Center, Dallas, Texas 75222.

### **Social Science Bibliography**

*The Study of Subject Bibliography with Special Reference to the Social Sciences* has been published by the University of Maryland School of Library and Information Services. The volume, part of the Student Contribution Series of the School, costs \$5.00.

### **On-Line Serials Control System**

An on-line serials control system, designed to permit display of holdings and information about the 12,000 serial titles received by the UCLA Biomedical Library, is being developed by the Library. The displays, initiated by typing the title of the desired journal on a keyboard, are viewed on a television type screen (IBM 2260 cathode ray tube) terminal. Supported by a National Library

of Medicine research grant, the project is expected to determine the feasibility of on-line systems for complex library operations.

### **Catalog of Roosevelt Library**

Visiting researchers can obtain copies of *Collections of Manuscripts and Archives in the Franklin D. Roosevelt Library*. The publication provides information on size and available finding aids, as well as the *NUC* card number for the library collections. Copies may be obtained from the library, Hyde Park, N.Y. 12538.

### **Book Spine Labels**

Abbott Labels Unlimited has developed an adhesive formula for labels for book spines that is said to eliminate the problem of labeling books. Abbott is located at 79 Mill Road, Freeport, N.Y. 11520.

### **Rollfilm Duplicator**

A rollfilm duplicator is available that can process 16mm or 35mm film at speeds up to 30 feet per minute. The duplicator, which has a 1,000 foot roll film capacity and occupies 4.7 square feet of desk space, has a completely enclosed processing area to protect the images from dust. Information may be obtained from GAF Corp., 140 W. 51st St., N.Y. 10020.

## COMING EVENTS

Feb 22-24. **National Federation of Science Abstracting and Indexing Services** . . . 1971 Conference at Hospitality House Motor Inn, Arlington, Va. Write: The Federation, 2102 Arch St., Philadelphia, Pa. 19103.

Feb 24-25. **ASIDIC** . . . at Hospitality House Motor Inn, Arlington, Va. Joint session with NFSAIS will be held Feb 24 on "Current Problems of Information Centers."

Mar 8-9. **Chicago Association of Law Libraries** . . . Conference on Law, Libraries and Automation, at the University of Chicago Center for Continuing Education. Write: Joyce Malden, Municipal Reference Library, 1005 City Hall, Chicago, Ill. 60602.

Mar 8-10. **1971 Drug Information Association Meeting** . . . in Washington, D.C. Theme: "Problems in the Dissemination of Drug Information to Professionals and Laity." General Chairman: William Kitto, Wallace Pharmaceuticals.

Mar 15-19. **Third International Congress on Reprography** . . . in London.

Apr 12-15. **Catholic Library Association** . . . at the Netherland Hilton Hotel, Cincinnati, Ohio.

Apr 17-25. **Photo Expo 71** . . . at McCormick Place, Chicago. Write: NAPM, 10 Rockefeller Plaza, N.Y. 10020.

May 2-4. **Institute on the Library School Library in Education for Librarianship** . . . sponsored by Emory University Division of Librarianship, at the Rodeway Inn, Atlanta, Ga.

May 6-7. **8th Annual National Information Retrieval Colloquium (ANIRIC)** . . . at Holiday Inn, Philadelphia. Program Chairman: Don King, Graduate School of Library Service at Rutgers, New Brunswick, N.J. 08903.

May 18-20. **Spring Joint Computer Conference, SJCC** . . . in Convention Hall, Atlantic City, N.J. General chairman: Dr. Jack Moshman, Moshman Associates, Inc., 6400 Goldsboro Rd., Washington, D.C. 20034.

May 30-Jun 3. **Medical Library Association, 70th Annual Meeting** . . . at the Waldorf Astoria, New York.

Jun 2-5. **18th International Technical Communications Conference** . . . in San Francisco. Theme: State-of-the-art in technical communications techniques, management, and hardware. Conference Chairman: James Weldon, Hewlett-Packard Co., 333 Logue Ave., Mountain View, Calif. 94040.

Jun 6-10. **SLA, 62nd Annual Conference** . . . at the San Francisco Hilton, San Francisco. Theme: Design for Service: Information Management. Conference chairman: Mark H. Baer, Hewlett-Packard Co., 1501 Page Mill Rd., Palo Alto, Calif. 94304.

Jun 7-8. **ACS Third Central Regional Meeting** . . . at the University of Cincinnati. Abstracts for papers in Chemical Documentation should be sent to Dr. Roger S. Macomber, Dept. of Chemistry, University of Cincinnati, Cincinnati, Ohio 45221, by Feb 1.

Jun 13-17. **American Association of Law Libraries** . . . at The Diplomat, Hollywood-by-the-Sea, Florida.

Jun 20-26. **American Library Association** . . . in Dallas, Texas.

Jul 20-23. **Third Cranfield International Conference on Mechanised Information Storage and Retrieval Systems** . . . in Cranfield, England. Conference Director: Mr. Cyril Cleverdon, Cranfield Institute of Technology, Cranfield, Bedford, England.

Aug 22-27. **ISLIC (Israel Society of Special Libraries and Information Centers)** . . . International Conference on Information Science, in Tel Aviv. Write: Organizing Committee, P. O. Box 16271, Tel Aviv, Israel.

Aug 23-28. **IFIP, Congress and Exhibition** . . . In Ljubljana, Yugoslavia. Write: U.S. Committee for IFIP Congress 71, Box 4197, Grand Central Post Office, New York 10017.

Aug 27-Sep 4. **IFLA (International Federation of Library Associations), General Council, 37th Session** . . . in Liverpool. Papers, with résumés, should be sent to the Liverpool Conference office by May 1.

Oct 10-14. **Aslib, 45th Annual Conference** . . . in Darmstadt, W. Germany.

## REVIEWS

**Communication Among Scientists and Engineers.** Carnot E. Nelson [and] Donald K. Pollock, eds. Lexington, Mass., Heath Lexington Books [1970] xiii, 346p. illus. (Studies in social and economic process) Q223.C655. I.C. Card number: 71-129156.

Some three or four years ago I got religion. I picked up a doctoral dissertation by Tom Allen (1) in an area somewhat alien, I thought, to my interests, and was introduced to the fascinating world of the gatekeeper and the Invisible College. Since that time I have read everything that Derek J. de Solla Price and Tom Allen have been saying and hoping fervently that the two would collaborate on a book entitled *Communication Among Scientists and Engineers; the Invisible College and the Gatekeeper*.

Well I got a book, the authors, the subject, but somehow I didn't get the product I wanted. Price and Allen were but two speakers at a conference on "Communication Among Scientists and Technologists" at the Johns Hopkins University in 1969 and the book we have is simply a collection of the papers read at the conference. The volume is organized into three major sections with: first, the communication structure of science and the production of scientific information; second, the utilization of scientific information; and third, the development of scientific information systems. The third section is unfortunate—it is not really relevant to the vital nature of the first two parts and it consists either of papers of pure theory and hypotheses (Whittenburg) like those which appear in wearying succession in the *Journal of the Advanced Theory of Information Handling*—now known as the *Journal of the American Society for Information Sciences*—or others on how-we-dood-it-good-at-our-place as frequent *Special Libraries*.

Not all papers in the first two sections are noteworthy. Orr's, for example, was a bit too turgid for me. But there is some sound and illuminating material: for example, those essays by the speakers from the host institution Nan Sin, William D. Garvey and Carnot E. Nelson. However, the point to be emphasized is that all librarians serving research and development personnel must allow the implications to librarianship of these papers to trickle through to them. I started this review by saying that Tom Allen gave me religion. It was a tiny table in his dissertation, which, if I recall correctly, stated that only 10% of the ideas which caused research scientists to create an advance came from a library. If there is validity to this claim, and I have no reason to doubt it, then it must follow that we simply are not doing our job. Over and over we have stated that we are not archivists; we are an active part of the research process.

In October of 1968 I drafted a suggested Library School curriculum (2). My number one course involved the study of the flow of information and communication between scientists and librarian. Most library schools have this concept salted among the many courses taught but none are willing to devote a full, core course to it.

In sum, the book is worthy. What is needed now is a synthesizer to draw from the many studies here and elsewhere and produce the book I asked for at the outset.

Erik Bromberg  
Office of Library Services  
U.S. Department of the Interior  
Washington, D.C. 20240

1. "Managing the Flow of Scientific and Technological Information." Cambridge, MIT Sloan School of Management, 1966.
2. *Special Libraries*. 59 (no. 8): 646-47 (Oct 1968)

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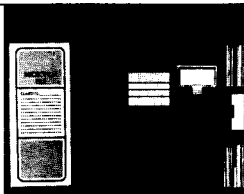
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**Information Scientist** (age 32)—M.Sc. in Geology (Geophysics); now working in U.K., 6 years experience (3 Civil Eng., 3 Metallurgy). Write: Box C-158.

**Latin American Specialist**—Avail. 2/71. M.L.S. Will receive MA Latin Amer. Studies 1/71. Knowledge Spanish & Portuguese. Limited experience in a spec. libr. Reply E. Miller, 1308 Spring St. #105, Madison, Wisc. 53715.

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**Veterinary Medical Librarian**—To develop general collections in veterinary medicine, supervise present subject facility and assist in planning for new Veterinary Medical Library to be located in scheduled \$20 million veterinary medicine complex. Qualifications: Academic background in life sciences, 3-5 years' appropriate experience and M.L.S. degree. Position available now. Salary open. Faculty status; TIAA-CREF; group life, disability and medical insurance; one month vacation. Apply with curriculum vitae to: Warren B. Kuhn, Director, Iowa State University Library, Ames, Iowa 50010.

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**Assistant Director for Readers' Services**—To plan and direct all reference and circulation services to 12,000 university students and 750 faculty members; responsible for the performance of a staff of fifteen librarians, twenty-four clerks and several student assistants. Applicant must have M.L.S. degree and appropriate administrative experience. Salary range \$13,000-15,000; a month's vacation, and the University pays full premiums for an accident and death insurance policy, a life insurance policy, and comprehensive Blue-Cross Blue-Shield coverage. Position now open. apply to: Charles D. Churchwell, Director of Libraries, Miami University, Oxford, Ohio 45056.

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## POSITIONS OPEN

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**Assistant Librarian**—Position with research center library involves a variety of activities, including standard library routines, but with emphasis on technical information services such as literature searching, etc. Prefer college graduate with some academic background in engineering or science. Position requires knowledge of scientific/engineering vocabulary, basic knowledge of library management, and acquaintance with information sources. One to three years' experience. Please send résumé, starting salary requirement, in complete confidence to D. W. Pearl, Personnel Manager, Research Division, Carrier Corporation, Syracuse, New York 13201.

**Overseas**—*Assistant Medical Librarian*, American University of Beirut, Lebanon. Immediately. To supervise, coordinate and develop readers' services of Medical Library serving Faculties of Medical Sciences (Medicine, Public Health, Pharmacy, Nursing), new Medical Center and physicians in area. M.S. and completion of a trainee program in biomedical librarianship. Arabic not necessary; French and German desirable. Appointment 3 years, round-trip transportation allowance, salary based on training and experience, generous fringe benefits. Send 2 résumés listing references to: Personnel Services, American University of Beirut, 305 E. 45th St., N.Y. 10017.

**Assistant Head Cataloger**—Biology and Agriculture. The H. W. Wilson Company in New York City has an immediate opening for a librarian with several years of cataloging and supervisory experience to assist the Editor on the Biological & Agricultural Index. B.S. or M.S. in biology or related sciences required. Excellent benefits. Salary negotiable. Direct résumé and inquiries to: Personnel Office, The H. W. Wilson Company, 950 University Avenue, Bronx, New York 10452.

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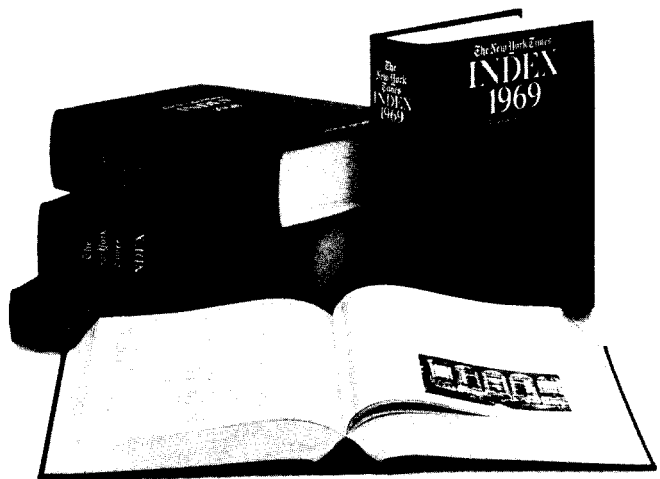
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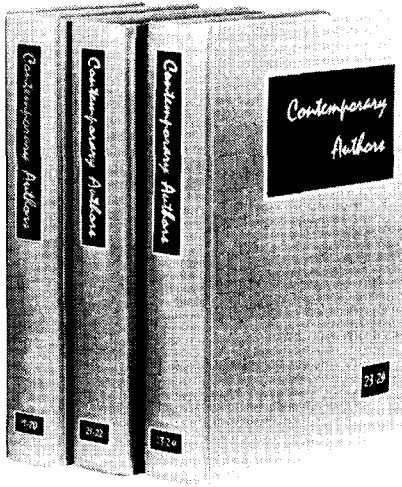
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