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OF LIBRARY
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VOLUME **19**

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NAMES AS CATALOG ENTRIES

The problem of names in library catalogs reflects the increase of communication in the world and has revealed a particularly urgent need. Names can be personal or nonpersonal. Nonpersonal names may include names of nonliving things, plants, trade names, and various types of institutions. The last category may include or mingle personal names. A more detailed classification of names is as follows (*1*):

1. personal names
2. corporate names
3. geographic names
4. artifact names
5. time names
6. mythical, legendary, and imaginary names

Names in the last category are simple to deal with. If it can be established that such names have achieved identity to a point where printed materials are available on them, the choice and form of these names for the purpose of cataloging should be subject to the same rules as those of real persons. Artifact and time names are generic in character. For example, in the U.S., "Thermos" designates a type of product rather than a particular brand (*2*). The term "Twentieth Century" may refer to the concept of physical time or to a particular duration of time as lived and experienced; one is a temporal index, the other is a cultural relativity. While time terms are susceptible to subjective interpretation, they are even more general in nature than artifact names. Both categories of these terms are broad class headings rather than names having one-to-one correspondence.

Geographic names include names of natural features, populated places, localities, and names commercial in nature such as airports, dams, and housing developments. Generally there is a great stability of these names, but some of these change completely and some only in their spelling variations. A geographic dictionary or a

gazetteer, and more particularly national gazetteers when available, are the prime source for identification and verification of place names. For other types of geographic names, local directories including phone books are resorted to. Lack of standardization of geographic names is a problem. The United Nations Committee on Standardization of Geographical Names in its meeting held in September 1967 at Geneva recommended production and continual revision of gazetteers by each national names authority. The task is so stupendous that even the U.S. has hesitated to undertake it. Anyway, the essential names appear to be timeless and ordinarily they present no special problems. For cataloging form of these names, the appropriate gazetteers must be checked, preference being given to the most recent use of the name, and once a name has been adopted, consistency must be maintained.

Much has been written on corporate names, and the article by Jay E. Daily (3) in this encyclopedia provides a synthesis of the problem and a solution to it. This article will, therefore, concentrate on personal names only.

Before taking up a discussion of the subject, further limitation of the topic is in order. The word catalog is a broad general term. In this article it is used to mean a library dictionary catalog. A library catalog is part of a larger frame of bibliographic communication which includes national and trade bibliographies and other bibliographic listings. Although the bibliographic principles involved in preparation of these tools are similar, the problems are different. Library cataloging appears to be far-reaching and more complex primarily because of its cumulative and comprehensive nature. It is also affected by the other available bibliographic tools, but not much the other way around. One other limitation; this article is aimed at English-language library catalogs. The problem of cataloging names is of different dimensions in different languages, and it is not humanly possible to approach the problem in the context of catalogs in even the few other major languages of the world, especially Russian and Chinese.

The single largest category of headings in a catalog appears to be the names of persons. A study (4) at the Library of Congress revealed that 74.7% of the main entries were personal name entries. According to a study (5) of the catalog of a medium-sized university library, 38% of all the entries were found to be personal name entries—main entries, added entries, and subject entries included. If all the different categories of names listed in the opening paragraph of this article are taken into consideration, over 50% of the entries in the catalog are found to be name entries. The importance of names in catalogs should, therefore, be obvious. In fact, one method of dividing a dictionary catalog yields a name and a topical catalog. Of course, a name catalog is not restricted to personal names only; it may contain entries for books by and about corporate bodies and, sometimes, even places.

There are many subdivisions and terms within the category of personal names. They are:

1. family name with given name, i.e., first name + surname
2. first, middle, and surname

3. personal names only (one word to many)
4. qualified personal names or personal names with honorific titles
5. nicknames and bynames
6. pen names or pseudonyms
7. changed and naturalized names

In the West, family names came into use roughly in the 11th century. It was not uncommon in those days for a surname to vary from father to son or even change within the lifetime of one individual. The decree made at the Council of Trent in 1563, which required every parish to keep complete registers of baptism, with the name of the child and his parents and grandparents, resulted in the stabilization of surnames. It is interesting to observe that the above decree came at a time when printing from movable type was widespread in Europe. No doubt printing and democratization led to the extension of learning and, with increasing output, the need for identification became paramount. As a natural corollary to all of these factors, Western names began to get standardized.

In China, Emperor Fushi is said to have decreed the use of family names about 2852 B.C. At any rate, the use of surnames in China since the 4th century B.C. appears to be common. Throughout Asia the pattern developed over the centuries, although not in a systematic way except for a few countries. Turkey officially adopted the practice of surnames in 1934, Iran in 1926, Thailand in 1916, although in the latter country it is reported to have been unsuccessful. Japan and Korea also have the practice of using surnames. In north and east India, educated and aristocratic families bear a given or personal name and a family or surname on the English model, for example, Jawaharlal Nehru, Indira Gandhi. Ranganathan observes that the influence of the British induced the practice of family names in Bengali, Kashmiri, Marathi, and Gujrati names. In western and southern India, the idea of family names did not seem to catch on at the same time. However, in South Asia, in general, there is now a trend to use family names. Such a trend is discernible in all developing countries with the increase in literacy, and more particularly with the increasing availability of higher education. The media and public opinion have also contributed to this. As in the Middle Ages in Western civilization, the practice is spreading from the aristocratic families and the big cities. *The Encyclopedia Britannica* (6) states that the original pattern of given names plus family names had been introduced practically everywhere by the 20th century. In the global context it is merely indicative of the trend rather than being a *fait accompli*.

The basic pattern of name is first + family name. To call an individual by two names is one of the oldest ways of identifying them. No doubt, there are variations in the basic pattern. Among the Chinese, the Japanese, the Koreans, the Vietnamese, and the Hungarians, the family name precedes the given name. The Hungarians, however, switch the order when they write in English, but the rest retain their order. Cataloging such names is not difficult so long as the order of the elements is clear. Mao Tse-tung's family name is Mao and his personal name is Tse-tung. Hence, all that is needed to further distinguish the surname for a catalog entry is to

put a comma between the two names. The same would be true for Norodom Sikhanouk.

In the West, the family name is the appropriate entry word, as given names are relatively few. According to Ranganathan, in South Asia individual or given names are abundant and so he suggests entry under that name (7). This observation is not true for Muslims in South Asia. Besides, a wide variety of individual names does not necessarily mean that these names are randomly or evenly selected. Each cultural or linguistic group delimits the universe of names from which individual names are drawn. Again, extreme popularity of a few select names (e.g., Ram, Anand; cf., John, George) appears to be the case throughout. In a typical large number of American names, as might be found in any large city's telephone directory, the most common surnames are approximately 1% of the total. The same general percentage holds true for most given names. Tests conducted to determine unique surnames revealed that there were about 300,000 unique surnames in a file of 3.5 million names (8). The situation is worse among Oriental names, and an interesting comparison of a small group of such names may be seen in a study published by the University of Pittsburgh (9).

Most name elements, especially the surname, are found to be spelled in different ways. These variants may have been the result of evolutionary changes or caused by transliteration from one language to another, or they may be simply idiosyncratic. In addition to such variants in all languages, the name elements may be expressed in different ways by abbreviating all name elements except the last (e.g., G. B. Shaw, George B. Shaw, George Bernard Shaw). For the purpose of easy identification, and to forestall scattering of the same name in different forms throughout the catalog, libraries maintain name authority files or assiduously follow such authorities as the *National Union Catalog*. With the publication of the *Library of Congress Name Headings with References*, the task is going to be much simpler.

A family name may be one or more of the following types:

1. baptismal or first names and their derivations
2. place names and their derivations
3. nicknames derived from occupations or social positions

In the matter of cataloging names, it is not necessary to find out or even understand the type of family name. However, it is the compound family name that compounds cataloging problems and hence an insight into the nature or origin of the name can be revealing. Compound family names are common, Turkish being the only exception. Compound surnames of foreign origin are adapted to Turkish forms in one word, for example, Ebubekir, elsewhere Abu Baker; Abdurrahman, otherwise Abdul Rahman. In Russian also, prefixes of foreign origin are assimilated to Russian forms and are treated as part of the surname. Connecting prepositions in Spanish, and in Arabic, for example, y, al, serve as useful signals for identification of compound names. However, many times these signals may be missing and in some languages, for example in Chinese and Persian, no particular sign is used to

distinguish a compound surname. In such cases, familiarity with the names or checking of appropriate sources are the only answers. With Finnish names, the problem is averted by the fact that all compound surnames are always hyphenated. In Greek, Swedish, Thai, Arabic (transliterated), and Persian (transliterated) compound surnames are also generally found to be hyphenated. The rules for catalog entry of surnames are rather straightforward. It must, however, be borne in mind that a hyphenated name does not always get the entry under the first element, for example, Francois Gaudet-Smet, a French Canadian, is entered under Smet. Anyway, the real problem of compound family names which appear without a hyphen connecting the two parts is in deciding whether the penultimate is a middle name or a maternal or a paternal name, or the significant part of the surname. Incidentally, the over presence of hyphens can also create a problem, for example, Pham-Quynh Vy-Trong-Phung, a Thai. In French, a forename is sometimes prefixed to a surname, for example, Raoul-Rouchette. In such an instance, obviously the second part of the name is the family name. The Ceylonese practice is interesting; if the compound is apparent, it is entered under the last part of the name. In Norwegian, if the compound surname is not hyphenated, it is entered under the last part. In Irish as well, for compound names consisting of two surnames, the entry is under the second one.

In regard to Spanish names, the situation is different. It is customary for a Spaniard or anyone belonging to Spanish culture to use the mother's name after the father's name. Thus, in the name of the novelist Vicente Blasco Ibañez, Vicente is the given Christian name, Blasco is the name of his father, and Ibañez the name of his mother. In the U.S., however, the novelist is referred to as Ibañez. According to Spanish customs, he ought to be referred to as Blasco or Blasco Ibañez. In other words, the family name in this instance is the last two words and if only one name is to be dropped, it ought to be the last one. To take another example, Francisco Franco Bahamonde is universally known as Franco. In Spanish, whether a person becomes known by his two family names or by his father's alone is determined by such considerations as: (1) length of the two family names; (2) whether they sound well together; (3) whether the mother's name is a distinguished one; and (4) whether the person would be confused with someone else if only the father's name is used. Sometimes in accordance with the older style, y is used between the two family names, for example, Sra. Maria Teresa Arco y Yanes. A woman may place her husband's name last, preceded by de, for example, Sra. Dolores Fernandez de Zayas = Sra. Dolores Zayas Fernandez.

The use of two surnames is not restricted to Spanish alone. For example, in Rumania, Yugoslavia, Czechoslovakia, Norway, Ireland, Portugal, and Brazil, the use of two surnames is prevalent although it is practiced in varying degrees. It ought to be pointed out that in Yugoslavia, contrary to Rumania, a person is likely to be known by his second surname. In Rumania the first surname is likely to be helpful for identification and it may be indicative of a branch of the family, a maternal ancestor, or a protector.

The compound form of a name may be such that the article or the preposition

appear joined with the last word, for example, Vonhausen, Delacroix, McCulloch, O'Brien, Fitzgerald. In cataloging, the most numerous problems relate to the form of names to be adopted. This is compounded by the fact that the national practice in regard to a name must be taken into consideration and there may not be a uniform practice in a given nation, as in Belgium, India, and many others. The migration, Anglicizing, Gallicizing, Romanizing, and transliterating all multiply the problem. Changes in the name of a person at different stages, for example, elevation in nobility, getting married, are other factors. By far the greatest problem area is that of surnames with prefixes, hyphens, apostrophes, and articles. Blanken (*10*) observes that there are few subjects in the international cataloging literature on which as many contradictory rules have been written as on names with prefixes. Bakewell (*11*) points out that Seymour Lubetzky, the mastermind behind the *Anglo-American Cataloging Rules (AACR)*, gave no guidance on these problems. It would be truer to say that he gave some guidance (*12*), but that he did not offer real solutions to the problem. It is, therefore, not surprising that the *AACR* is very sketchy on problematic names and that the variations which cause the most difficulty are not covered by any rule.

Problems of names with prefixes arise in at least three different ways: (1) national usage in one country may be different from another; (2) names originating in one country or in one language are borne by citizens of another country or another linguistic group; (3) individual preferences by bearers of the name. The seriousness of the problem lies in the fact that in every case the exact place of the name in the catalog is determined by the form that is used in each instance.

In the names of Americans and Englishmen, no matter from what language derived, the prefix is considered as part of the surname whether written separately or contracted or joined together, for example, De la Mare, Van Dyke, and D'Israeli. In English-speaking countries as a whole, and in Italy, for modern authors, this appears to be the practice. It is interesting to observe that the practice in German trade bibliography, *Verzeichnis lueferbarer Bücher* for German names; and in French trade bibliography, *Biblio* for French names, coincide with the British and American practice. The *National Union Catalog (NUC)* enters some German names under the prefix but there are exceptions. For example, Goethe is not entered under Von Goethe, although in *Books in Print (BIP)* it is under the prefix—*BNB* has, however, "see" references for all names with Von.

In Switzerland, names with German prefixes are entered under the prefixes; whereas, in Sweden they are entered under the part following the prefix. The German practice, in general, is (*1*) to enter it under the prefix when it is a preposition and an article combined in one word or elided (*11*), and to enter it under the part following the prefix when it is a preposition or a preposition and an article written separately, for example, Goethe, Johann Wolfgang von. The German encyclopedia, *Der grosse Brockhaus,* notes that "von" was originally indicative of descent in family names and used mostly for nobility since the 17th century.

As in German, so in Dutch and Spanish, the preposition and the article preceding the surname without contraction are not chosen for entry, for example, Velde, Van

der; Casas, De las. In French the preposition de only is disregarded, that is, the entry is made under the part of the name following the preposition de, for example, La Fontaine, Jeane de. French names naturalized in Sweden, Norway, Denmark, and Belgium are entered in those countries under the prefix. This is also true in Rumania, other than the prefix de. The situation in Belgium merits particular attention as it is a bilingual region of Romance (French) and Germanic (Flemish) dialects. What is even more interesting from the anthroponymic point of view is that in the matter of naming people, the language of and by itself is not of intrinsic importance. In other words, the motives, processes, and etyma involved in the giving and perpetuation of family names transcend linguistic boundaries and are more often determined by historical, sociological, and geographical conditions than anything else. The cataloging practice for Belgian names is thus variable. In the French-speaking part of the country, the tendency is to treat names of French origin according to French usage, and with names of Flemish origin to take the prefix as entry word; in the Flemish-speaking part, the tendency is to treat all names with prefixes according to Dutch usage, that is, to place prefixes (whether of Flemish or French origin) at the end of the name and to take the name following the prefix as entry word (13). In Switzerland, names with German prefixes are entered under the prefixes, whereas in Sweden they are entered under the part following the prefix.

If it were possible to treat all prefixes as an inseparable part of the surname irrespective of how they appear, cataloging of names would have been an easy task, by simply entering them under the prefix. Or, if all prefixes could be disregarded whether they are combined with surname or not, an easy solution would have been found. In other words, handling all prefixes alike is simple and mechanistic, but it is not tenable because of the difference in usage. It is interesting to note that the Paris Conference recommended adherence to "agreed usage in the country of which the author is a citizen" or "agreed usage in the language which he generally uses" (14). Domanovszky (15) takes issue with this approach and he feels that instead of rejecting the former failures of codes, the above recommendation simply restates the old problems. He considers the information in the IFLA Report (Sec. 13) detailed, but finds interpretations of family names unsatisfactory, particularly in regard to compound names and names with prefixes, and when one or the other part of the name is to be chosen as entry word. He also states the difficulties of search involved in attempting to follow "agreed usage" in the author's native land, which must be preceded by determining the native land of the author. He points out that national usages differ and contradict. He believes that international unity in cataloging can be achieved only through authoritative regulations.

In the early times each person had only one name. When man lived in small or secluded societies, a single name was enough. In Europe, the Jewish people usually lived in secluded communities and hence they needed no family names. As their numbers grew, various nations enacted laws requiring them to adopt surnames.

In the old Indo-European system, the single name could be a compounded one or a noncompounded one. Examples of compounded surnames abound in Sanskrit.

According to Ranganathan (*16*), British influence of the pattern of short and two-worded names may have resulted in North Indian names being split, for example, Ramnath = Ram Nath. This may, however, be misleading as the last part might appear to some to be the surname or entry word, which it is not. In other parts of Asia a single name (single word or double word) is still prevalent, for example, Soedarsono, an Indonesian name; Kwi, a Burmese name. In Burmese, however, the individual name is usually preceded by an honorific indicating age, status, or sex and as a rule such honorifics are written or mentioned. In Indonesian names, sometimes an honorific is added at the beginning and the honorific chosen is dependent on the island from which the person comes.

It has been mentioned that, in prehistoric times, a single name element came into common use for the purpose of identification. During the time of the Romans, the custom of having three or more names developed. This practice fell into disuse during the Middle Ages. It became prevalent again in the last several centuries. It is quite common for an American to insert a second or a middle name between the first and the last name. In Europe, the middle name is not as common as in the U.S., but in German usage it can be the most important element in the name. In Iceland and in the Soviet Union, the middle name is derived from the given name of the father (*17*). While for a vast majority of names, the middle name may be inconsequential, recording it and spelling it out in full may be a necessity for some of them. The use of a middle name is becoming quite common in Portuguese to help identification (*18*). The presence of three elements in a name does not mean that the middle element is necessarily the middle name. In some cases it may be the first part of the compound surname, as discussed above, or it may be the second syllable of a given name, for example, Bu Sik Kim, a Korean name.

Popular usage throughout the ages has created numerous designations in all cultures from religious, social, literary, or other positions. Some of these are now accepted as surnames. In some cultures it is not easy to distinguish a title from a surname, as in Bengali Muslim and Hungarian names. The Muslim conquerors brought into the Indo-Pak-Bangladesh subcontinent titles like khan, amir, and malik which may be comparable to the British duke, earl, and baron. Today the term khan is a common affix to the names of Muslims of all ranks in the subcontinent. In most cultures an honorific or a title is usually added at the end. There are some titles, for example, sir, graaf, which are always used at the beginning. Among Muslims in South Asia, as also in the linguistic groups of Tamil, Telegu, Malayalam, and Kannada, some titles may be used either at the beginning or at the end. The entry element in these names is, therefore, variable. In Italian and Portuguese, the entry element may be the title of nobility if the person is generally identified or known by it.

In many cultures, a nickname is an informal name given to an individual in addition to the given name. It may be given at birth or at any time during his lifetime and sometimes it is descriptive of the individual. Several universally known artists are known by their nicknames: Tiziano Vecelli as Titian, Theotocopuli Dominico as El Greco. There is little merit in being technically correct in rendering a name if

the result bears no relationship to the name by which a writer is universally known. A catalog that does not take cognizance or make proper use of the nicknames leaves much to be desired. Such appellations, not necessarily complimentary, bring added dimension to the person, place, or object nicknamed. Nicknames in the literature are not really numerous. Hence, they do not pose serious problems in cataloging.

A byname also falls in the category of nicknames, although there is some difference. A byname is used to differentiate persons with the same family name if they belong to different families and if given names are not used among them. It may indicate nationality or place of birth, or residence or occupation, or any other designation, for example, Jones at the Pond, William of Wykeham, Alexander ab Alexandro, Alexander de Angelis. Among the Telegu- and Malayalam-speaking people in India, a place name is added whenever individualization of a person requires it.

An author might want to conceal his real name and use any designation in his works to describe authorship. Such false designation may give the impression of a real name. It may be just a forename or a surname or even a full name. It may be a descriptive term. Whatever the designation, if a person is commonly identified by any one of these other than his real name, there is no problem. When an author uses his real name in his works and also uses a pseudonym in a special literary genre, there may still be common ground among catalogers to decide the entry. The problem gets out of hand when an author uses his real name and pseudonym or pseudonyms indiscriminately.

Allied to the question of nickname and pen name is the question of change or naturalization of name. There are names that have become naturalized in the Western literature in Latin form, for example, Avicena (Arabic, Ibn Sina), Confucius (Chinese, Kuang Fu-tse), Zoroaster (Persian, Zarathustra). It would serve little purpose in library catalogs in the West to have to establish these names in their vernacular forms. Now, the changed names: Charles Sealsfield was originally Karl Postl, and Andre Maurois was Emil Solomon Wilhelm Hertzog. Then, there are the names of married women. In discussing the problem of names of married women, one author had this to say:

> woman in literature to the cataloger is a stern reality, a thorn in the flesh . . . came
> arrayed in all its terrors. Though not a sworn foe to matrimony, I fear were I
> the autocrat of the library work a ukase would long ago have been issued forbidding
> women writers to marry (19).

In the Old Testament, it was customary to change a person's name whenever his status or work in life changed.

Great care must, therefore, be taken to determine whether the name is a nickname, pen name, or a changed one, and the forenames must never be confounded with the surnames. When there is a choice between a nickname and an original and changed name, or between a real name and a pseudonym, the problem is not difficult to solve when all the pertinent facts about a name are known and all the works by that author are physically present before the cataloger. Obviously, dif-

ferent names designating the same author or variant forms of the same name cause great difficulty in cataloging work, particularly if the literary units principle is to be observed.

If the form of personal names is as much of a problem as indicated here, why not do away with them or use them sparingly in catalogs? The rules concerning the form of name have indeed been described as petty, pedantic, and puttering. The personal name is, however, most easily identifiable in a work. It is also the element by which one can be certain of the work sought; it surely is more definite than non-name or topical subject entry. Besides, retrieval of information by using personal names is simpler and faster. The Institute for Scientific Information maintains (20) that author search in *Social Science Citation Index* takes one-third the time of that taken in permuterm or citation search. Of course, the author of a work is not always known, or the responsibility of the work may be so conjured up that no suitable name may be found. The *AACR* is based on the authorship concept but no workable yardstick for measurement of authorship has been provided. Osborn's statement that the concept of authorship is a difficult and confused one is often quoted in the literature. The concept of personal authorship is clear when applied to monographic works by single authors, but it becomes tenuous as it is pursued through shared authorship. Is the person who gathers together the writings of several authors the rightful author of the compilation, although he is not responsible for the intellectual content of the materials? This is not to say that the name of the compiler may not be helpful for identification of the work. However, if an entry under the compiler in this instance is justified for the purpose of identification, not on the basis of intellectual responsibility, and this forms the basis for entry, much confusion on the function of authorship would have been avoided. *AACR* appears to have made a compromise between the two criteria: identification element and intellectual responsibility, and the result has been such an unworkable rule as No. 4A. A decision about a work that may not contain a positive or negative statement concerning the editorial responsibility is dependent upon the cataloger's judgment, or in other words, excessively arbitrary. Determination of the author for the purpose of the main entry in case of multiple or shared authorship is always likely to be open to question, and even more so for composite works.

Jolley (21) suggests that names most closely associated should be substituted for authorship. This idea was pursued on a small scale by randomly selecting 100 titles which had a person or persons closely associated with the work as editor or compiler, but the *NUC* entry was under the title. These titles were checked against *Cumulative Book Index (CBI)*. Out of the 100 titles, 58 could not be traced in the *CBI* at all; 32 were given main entry under the title, as in *NUC*, and only 10 were found to be entered under the editor or the compiler. The last category of the titles, however, appeared in *CBI* prior to their being listed in *NUC*.

One logical conclusion that can be drawn from this simple and brief survey, although the data is not statistically significant, is that in the absence of a *NUC* entry, there is a chance for a work having a name or names closely associated with it to be entered under such name or names. The other conclusion that may be drawn from

the same survey is that once a title has been rendered in *NUC*, the same choice and form of heading is likely to be perpetuated in other bibliographic tools. The first conclusion, insignificant though it is, validates Jolley's ideas; the second conclusion does not make his suggestions invalid but merely points out the fact that other bibliographies are up against the cataloging practice of LC. His ideas would thus be inoperative as, according to Zipf's law of least effort and the general concern for (apparent) economy, the tendency would be to accept whatever ready-made entry is available, especially if it is from the Library of Congress, irrespective of whether it is the best possible entry or not.

Yet another problem with names is their arrangement. Names are usually arranged in a file in alphabetical order. The problem is incremental as the file size increases. A second way to arrange names is by alphameric methods (*22*). Because fewer characters are involved in assigning numbers discretely to an individual and because numbers are easier to manipulate both manually and mechanically, the second method is being increasingly used. Cutter numbering is an example in point which has been used in libraries for nearly a century, although not for arranging names as such, but to keep materials on shelves in alphabetical sequence by author. The soundex system used by the Social Security System, Immigration and Naturalization Service, and other federal and state agencies is comparable to LC Cuttering. Like LC, it retains the first letter of the surname as the initial character, and assigns numeric codes to consonants, but unlike LC, drops all vowels and certain consonants. The soundex code puts all surnames into a four-character alphameric code, and it provides a 26,000-code system into which any and all surnames are placed. The fault of the system is that it cannot distinguish names spelled in different ways. On the basis of name frequencies found by the University of Oregon, IBM has developed (*23*) a 10,000-division names code which also suffers from some of the shortcomings of the soundex system. IBM has also developed a ten-position code based on the last name, first name, and middle initial; five additional positions are used in this system to describe date of birth, sex, eye color, and height. These 15 positions result in a unique number. Such a system has obvious operational limitations.

A third approach is a classified one by which etymologically related names are put together. While this system is not readily available and must be expensive, time-consuming, and even difficult to put into practice, it is capable of solving a number of problems which the other systems cannot. For example, the problem of names with references is insurmountable in an alphabetical file, but a classified system may obviate the necessity of the numerous references. The problem of transliterated names can also be brought under control in a dependable name-grouping system. The name Burke may be spelled in at least ten different ways; Huq in eight. There are etymological relations between large numbers of surnames and they can be put into logically related groups. However, the most common, if not the only, method used in libraries is the alphabetical arrangement. It is not uncommon for a medium-sized university library to have a million cards in its dictionary catalog. The Chicago University catalog has over 5 million cards and the LC official catalog

has over 15 million cards. The New York Public Library annually adds about a million cards. With such massive files, a considerable part of which are name entries or references, millions of retrievals are being made humanly possible all the time. There is very little that can be done to increase the efficiency of the average lookup. The best recourse would appear to be to provide the best possible access point or points, not by rigid application of mechanistic rules, but by using whatever headings and forms that custom and usage have established, making them likely to be sought because in alphabetic filing arrangements the element of predictability is inherent. In the matter of deciding form or heading of a name entry, a subjective element arises. This can be overcome only when there is a network approach to an authority on names, access to which may be instantaneous. The availability of the Library of Congress Name Authority file on-line will be the first step in this direction.

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NASHVILLE PUBLIC LIBRARIES

Nashville (Tennessee) has always been a town interested in literary matters. From its very early writers and unusually fine bookstores—for a frontier settlement—to its vast present-day publishing industry, the printed word has been important to the citizens of the city. As an example of the city's literary taste, Emerson is reported in the mid-1800s to have written to Carlyle that, next to Boston, more of his books were sold in Nashville than elsewhere in America.

The public library movement in Nashville is no exception to this trend, for it dates back to 1813 (some 30 years after the city's founding) when the Tennessee General Assembly passed "an act to incorporate the Nashville Library Company." As in most cities of the time, this was a subscription library. Seven directors were appointed and empowered to choose a librarian, clerk, and treasurer.

While the early records are sketchy and perhaps the beginnings were modest indeed, evidence points to a great deal of interest. In 1823 the general assembly passed an amendment to the original Nashville Library Company Act authorizing a lottery to raise up to $5,000 "for the purchase of books for the use of said library." A second amendment passed in 1826 appointing commissioners to promote and administer the lottery. In March of 1825 a "Catalogue of Books in the Nashville Library" was published, a copy of which still exists. This catalog contained the names of the directors and the librarian, one Jervis Cutler, and the Rules of the Nashville Library which, because of their possible interest to present-day librarians, are printed below:

I. The Library shall be kept open on Wednesdays and Saturdays, from 10 until 2 o'clock.

II. All books, (excepting new works,) taken out by shareholders, must be returned within four weeks, or they will be subjected to a fine of 12½ cents for the first week, and 25 cents for each succeeding week thereafter. All new works must be returned within one week, or they will be subject to the same fine.

III. All books torn or defaced, shall be finable according to a decision of the Librarian.

IV. Every shareholder is required to pay a semi-annual contribution of one dollar on each share.

V. Persons not holding shares, and wishing to borrow books, may do so by depositing with the Librarian the value of the book, or set of books, he wishes to borrow, and paying for the use of said book the sum of 12½ cents per week.

In 1841 a second library, the Mechanics Library Association, was organized. In 1844 it merged with the Nashville Library Company to form the Mechanics Institute and Library Association. This chartered subscription library continued to give service for 20 years or more.

About 1850 Captain William B. Stockell, of the Nashville Fire Department, succeeded in establishing a library for the "fire-fighting laddies," which was located in an old engine house in the midtown area. The extent or duration of this undertaking is not known.

A Young Men's Christian Association was organized in Nashville in 1855. It operated a small library that was open to the public daily, and featured a collection of the leading newspapers and periodicals of the day, in addition to the book collection of some 400 volumes. This library did not long survive the vicissitudes of the Civil War. It was reorganized in 1867, and continued for some months, but was soon suspended because of the unsettled state of society attendant upon the Reconstruction era. A Mercantile Library Association was organized in 1860 and continued to give service until 1863, when it passed out of existence.

The first library to be organized after the Civil War was that of the Nashville Library Association (not to be confused with the earlier Nashville Library Company). It was organized at a meeting held in the Common Council Room on the night of June 15, 1871. The library established by this association was known as the Nashville Library, and was located in the old Bank of Tennessee Building. By December 1871, the Nashville Library could boast a collection of over 4,000 volumes.

In 1876, at a public meeting of prominent Nashville citizens, the advantages of a good public library were set forth and a call issued for support and the donation of books. The management of the Nashville Library was then at this time turned over to the Young Men's Christian Association. The library was open daily from 8:00 A.M. until 10:00 P.M., and on Sundays from 3:00 to 6:00 P.M. The reading rooms were open to every young man, but circulation was restricted to members of the Young Men's Christian Association. The library was moved in 1888 to 327 Church Street, and passed out of existence when the building was destroyed by fire in 1894.

The efforts and attempts to establish libraries for the public in Nashville were many, with, at times, more than one such library operating at the same time. The permanent and present public library system can trace its actual beginning to the year 1885. In that year an engineer and surveyor by the name of Memucan Hunt Howard gave $15,000 to found a library in Nashville. The library was housed in a room at Watkins Institute (a night, adult education school in the heart of the

business district that had been founded by a wealthy Nashville builder, Samuel Watkins).

The story goes (according to the *American Historical Magazine*, January 1904) that Mr. Howard and Mr. Watkins felt themselves indebted to Judge John M. Lea for some services which the last-named gentleman had rendered them, and for which he refused to receive compensation. When they insisted on paying him, Judge Lea told them to donate whatever sum they thought due him to some philanthropic purpose. When the matter took shape and the library was decided upon, instead of a gift of a comparatively small amount, a donation of $15,000 was made by Mr. Howard. Mr. Watkins then provided that one room in Watkins Institute should be reserved for public library usage. A state charter for the library was secured providing for a board of directors and officers. The library opened its doors in 1887 and became known as the Howard Library, with Joseph S. Carels as the first librarian, and a local bookseller, Mr. A. Setliff, selecting some 7,500 books at a cost of $10,000. The bylaws of the library were meticulous in every detail and contained many pages of rules and regulations which, among other provisions, excluded from the library persons intoxicated or those using tobacco; also no lounging, no loafing, no dogs, and no children under 7 years of age.

For 11 years the Howard was a reference library only and during the panic of 1893 almost closed its doors through lack of funds. Gifts from civic-minded citizens kept the library going, but in 1896 the directors voted to close the library. This action was rescinded, however, when the directors were successful in promoting a library bill in the Tennessee General Assembly authorizing "cities of twenty thousand or more population to establish and maintain free public libraries and reading rooms." To understand the significance of this law it must be realized that up until that time city governments in Tennessee had no legal authority to use tax money for the support of libraries. The city of Nashville, acting under the provisions of the newly passed law, immediately appropriated $2,500 for the Howard Library for the year 1898.

In 1899 the directors provided a circulating collection for home use upon the payment of $2 for a readers card. By 1901 the city's annual appropriation had been increased to $5,000 and the Howard Library was made the city's first free circulating library. The increased appropriation also made it possible to pay the librarian a salary. The first librarian, Joseph S. Carels, had served for some 12 years without pay.

Miss Mary Hannah Johnson, who received her library training at the University of Chicago and the Albany Library School, became librarian in 1901 and in that year the directors of the library and members of the Nashville Chamber of Commerce approached Andrew Carnegie for a donation for a new library building. Mr. Carnegie offered to give $100,000 for a building on condition that the city appropriate 10% of that amount ($10,000) annually for the operation and maintenance of the library. The site, at Eighth Avenue and Union Street, the former gardens of the home of President and Mrs. James K. Polk, was donated by James Craig McLanahan and other public-spirited citizens, and the conditions and terms

were agreed upon by the city and by Mr. Carnegie. A charter for the "Carnegie Library of Nashville" was granted on November 12, 1901.

The Carnegie Library building of Nashville, designed by architect A. R. Ross of New York, and local supervising architects, Thompson, Gibel, and Asmus of Nashville, opened in 1904 with Miss Johnson continuing as librarian. All of the assets of the Howard Library were transferred to the new Carnegie Library building.

The new building, 84 by 84 feet, was of three stories. The foundation was of granite and the outside walls were of cut native limestone. The style of the building was Romanesque Revival and closely resembled other Carnegie libraries of the time. The windows were large, with a round arch at the top. The departments and rooms on the main and second floors were connected by a grand stairway of white marble. In the center of the building was a well surrounded by large columns, with a frieze surmounting the columns with the names of classical authors in raised plaster. It was a handsome building for its day.

Miss Johnson established sound practices of librarianship which have remained basically unchanged to the present day, such as: the Dewey Decimal Classification for the arrangement of books, the dictionary catalog for locating material, a shelf list for inventories, and a special section of books about Tennessee and Nashville.

In 1901 Miss Johnson began binding the city newspapers, and several years later the *Nashville American* gave to the library a priceless collection of old Nashville newspapers, about 400 bound volumes in all, which formed the nucleus of the present collection. It dates from 1813 and is one of the finest such collections in the nation.

In 1905 Miss Johnson instituted the first children's story hour in the city. Through her efforts, the Tennessee State Library Commission was established. She also organized the Tennessee Library Association and was its first secretary–treasurer and honorary president. She early foresaw the need for branch libraries and mentioned them specifically in her *Annual Report* for 1909. She initiated the request to Mr. Carnegie which resulted in his gift of $50,000 in 1912 for the North Branch and Negro Branch buildings. Under her direction the book stock grew from 9,000 in 1901 to 70,000 volumes in 1912.

Miss Johnson resigned in 1912 to be married to Philander P. Claxton, United States Commissioner of Education. Andrew Carnegie presented Mrs. Claxton with a check for $1,000 as a wedding gift. Miss Johnson was, incidentally, the first woman in Tennessee to be included in *Who's Who in America*.

Miss Margaret M. Kercheval, who had been Miss Johnson's First Assistant at both the Howard and the Carnegie Libraries, became the new librarian. During Miss Kercheval's administration (1912–1920), four branch libraries were established.

A South Nashville Deposit, which soon became the South Branch, was opened on October 29, 1914 in the old Montgomery Bell Academy Building in South Park, where the Board of Park Commissioners provided a room and a library attendant. Service was continued at this location until 1942, when the building burned and the library collection of some 6,000 volumes was destroyed.

Also in 1914, a room for the blind was opened. With the help of the Council of Jewish Women of Nashville, the room was furnished with magazines, deposits of literature from the St. Louis Public Library, games of cards, backgammon, etc., a typewriter, and slate for letter writing.

Work was begun on the two branch buildings made possible through the Carnegie gift of 1912. The citizens of North Nashville subscribed $3,750 for the purchase of the lot, and the North Branch was opened in 1915. The City of Nashville gave $5,000 toward the purchase of a lot for the Negro Branch, on condition that the Black citizens raise the remaining $1,000 asked for the lot. This they did, and the Negro Branch was opened in 1916.

The branch program as envisioned by Miss Johnson also called for a library in East Nashville. Mr. Carnegie again gave $25,000 and stipulated that the City of Nashville appropriate $2,500 annually for the support of the library. The Nashville Railway and Electric Power Company donated the site for the new branch—an excellent location on the "Triangle" formed by the junction of Main and 11th Streets. Various citizens' groups of East Nashville contributed funds for the sewer, lights, grading, and walks. The East Nashville Branch was opened for service in 1919.

Miss Kercheval resigned as librarian in 1920, and on June 4 of that year G. H. Baskette was drafted as librarian by the Board of Directors, of which he was president. Mr. Baskette was editor of the *Nashville Banner*, which position he resigned to head the library. He devoted his energies toward an increase in the budget and did finally succeed in securing an annual appropriation of $35,000. The library suffered from this inadequate support and it is difficult to understand how it could have been possible to operate a central library and the four branches on an annual budget of $35,000.

Mr. Baskette died on March 27, 1927, after 31 years of service to the cause of public libraries in Nashville. This service extended from the time of his election as a corporator of the Howard Library in 1896, through his many years as President of the Board of Directors, to the years as Chief Librarian of the Carnegie Library.

In the spring of 1927 Charles H. Compton of the St. Louis Public Library was invited by the Board of Directors to make a survey of the Carnegie Library. This survey is an important milestone in the history and development of the library. It convinced the directors of the importance of a trained librarian, gave new impetus to the drive for more money, and emphasized the need for more books and the extension of library services.

With regard to personnel, Mr. Compton recommended that the Carnegie Library should be headed by a person with formal library school training. Since this position was vacant, this recommendation was met immediately when Mr. Harold F. Brigham, the first chief librarian to have a graduate degree from a library school, became librarian in the summer of 1927. Mr. Brigham was a graduate of Princeton University and the Library School of the New York Public Library.

Mr. Compton also recommended that the training classes conducted by the library be discontinued. At that time the Carnegie Library of Nashville, in common

with many libraries throughout the country, offered a 6-month, in-service training course for beginning librarians. No member of the staff at the time of the survey had formal library training. About this time, Peabody College began offering courses in library science, so Carnegie's training program was discontinued and staff members were encouraged to study at Peabody.

Mr. Compton pointed out the low salary schedule. Salaries were below the standards for libraries of a corresponding size, and it was recommended that they should be made more nearly comparable to those paid in other libraries and in similar professions.

In regard to books, Mr. Compton called attention to the inadequacies of the book collection, and especially of children's books. He recommended that the circulating collection, both adult and juvenile, be restocked; that many volumes be discarded because of their dilapidated condition; that the circulation department place between 10 and 20 thousand books on open shelves; that the Children's Department keep longer hours and be placed under a trained librarian; and that the branch libraries should not acquire books not in the main library.

It was also recommended that a special collection be built up which would serve the industrial and business interests of Nashville. Accordingly, in 1931 Mr. Brigham affected the establishment of the Business Branch in the old Chamber of Commerce Building. This branch served all members of the Chamber of Commerce. The Business Branch was moved to the main library building in 1937, it having outgrown its quarters in the original location. During this time, a prominent businessman, Mr. H. G. Hill, gave $50 per month toward the support of the business library.

In 1931, Mr. Brigham resigned to become Director of the Louisville Free Public Library. He was succeeded by F. K. W. Drury, one of the pioneer author–teachers in the field of library science and a graduate of the University of Illinois Library School. Mr. Drury carried forward the policies and plans which had been initiated by Mr. Brigham, and was able to get the budget up to $55,000. When the depression caught up with the city's finances, the library's budget was cut $10,000 a year for 2 years in succession: to $45,000 in 1933; to $35,000 in 1934. From 1935 through 1945 the city's annual appropriation was $40,000, an amount just sufficient to maintain existing services but insufficient for adequate book purchases.

During Mr. Drury's administration complete inventories were taken, catalogs were completed for various collections, and the book stock was improved by discarding unused and outdated books and by enforced careful selection of new titles. Mr. Drury was himself the author of a widely accepted book on the subject of book selection, as well as several other books used in library science courses.

In the 1930s and early 1940s a variety of projects for the library were undertaken and completed by the Works Progress Administration (WPA) and other state and federal public works projects. These included the installation of new shelving in the newspaper room, the building of a concrete parking space and a walk around the north side of the main building by various federal work projects, and the repairing of thousands of volumes of bound periodicals, newspapers, and books by

the WPA. The WPA Art Project also provided the King Arthur Mural for the Children's Room. In addition to the work done at the library itself, the WPA sponsored demonstration libraries throughout the county in 1939 and 1940, and in 1941 the Statewide Library Project furnished a bookmobile which made weekly demonstration rounds throughout the county. Perhaps one of the most outstanding projects during these depression years was the indexing by WPA of the Nashville newspapers.

In order to call attention to the fact that the library is a public, tax-supported organization, the Board of Directors of the Carnegie Library of Nashville, Inc. voted in 1934 to change the name to the Nashville Public Library.

Mr. Drury was an outstanding librarian. He guided the library system through perhaps its most trying times: the great depression and the critical war years.

The war years were marked by a decrease in circulation as well as a general decline in the use of the reference services. This condition was by no means restricted to Nashville, similar trends being observed in public libraries all over the nation. Nashville Public Library employees aided the war effort by cooperating in the Victory Book Campaigns. Staff members sorted many thousands of books for shipment to the armed forces.

Dr. Robert S. Alvarez, a graduate of the University of Chicago Library School, was named librarian upon the retirement of Mr. Drury in 1946. Under Dr. Alvarez's direction, the Nashville Public Library continued to expand its services despite its low budget. Some of the more noteworthy achievements of his administration were the initiation of bookmobile service in 1947 and the extension of this service to county patrons by adding a second bookmobile in 1957; the establishment of a Young Modern's Department in 1947, a Music Department in 1948, a Business Information Service in 1953, and a Business Branch in the new Chamber of Commerce Building in 1958; and the setting up of several small self-service collections, called "booketerias" in supermarkets in 1953. Sound motion picture films, phonograph records, and art prints were added to the services of the library during the late nineteen-forties and early fifties.

In 1950 the directors of the Nashville Public Library entered into a contract with the Davidson County Court which enabled the library to give free service to patrons living outside the City of Nashville. Prior to this, Davidson County patrons were charged $2 for a book card. Under the new arrangement, the County Court paid the library 25¢ for each book taken out by a county patron.

By 1948 the Black population had shifted to such an extent that the Negro Branch at 12th and Hynes was no longer the center of the Black community. In that year the Negro Branch property was sold for $42,000 and the proceeds set aside for the construction of a new branch in a more convenient location. Service to Black patrons was maintained at a temporary location at 409 Gay Street. In 1949, bookmobile service to Black citizens was inaugurated.

A site for the new Negro Branch was selected at the entrance to Hadley Park in North Nashville, and the property was leased from the Park Board. The new branch, known as the Hadley Park Branch was opened for use on April 13, 1952.

The library board through the years had been an independent, somewhat self-perpetuating board and the library was not officially considered a part of the administrative organization of the City of Nashville. Many years of legal discussions took place between the board and the city administration before the city finally took over the library in March 1959. At that time the mayor appointed a new board, with Mr. Charles C. Trabue, Jr. as chairman, and the library became a fully operating department of the city government with the staff having pension, Civil Service, and rights equivalent to other city employees.

Dr. Alvarez resigned on October 1, 1959, to become Director of the Berkeley, California, Public Library. Mrs. Margaret Benson served as acting librarian until a new librarian could be appointed. The present librarian, David Marshall Stewart, assumed his duties on June 1, 1960. Mr. Stewart, a native Nashvillian and a graduate of the Peabody Library School, arrived at a time when the mayor and leadership of the city realized that something needed to be done to improve the public library system.

A study of the library system by the City–County Planning Commission that had been underway for several months was completed in late 1960. It was an extensive study entitled "Books for Metropolitan Nashville." It recognized the need for a new main library building to replace the old Carnegie building, and additional branches to meet the needs in the suburbs. The city at this time had only three branches: the two old Carnegie buildings, North Branch and East Branch, and the 10-year old Hadley Park Branch. The planning commission's study recommended locations for nine additional branch libraries and made far-reaching proposals and recommendations regarding the future development of the library system.

While the study was being completed, work was already underway on the extensive remodeling of a community house in a park in West Nashville, which opened on October 23, 1961 as the new Richland Park Branch. The money for this project came from a small city bond issue made available for this purpose and the repair and renovation of library facilities. East Branch was extensively renovated and minor repairs were made to all of the other buildings.

About this time Nashville, as well as much of the nation, was undergoing great changes in the economy and other fields, but none were more pronounced than the changes in human relations. The library system had since 1916 had a branch called the Negro Branch. This was a tradition of the times as well as an effort to make the library services more accessible and to create an interest in using the library by the Black population. By 1960 the Hadley Park Branch, which had been the replacement for the Negro Branch, was always referred to as the Hadley Park Branch. While the Black population traditionally used only the Negro Branch, as far as can be found, no records exist of Blacks ever being denied use of or being turned away from any of the libraries.

A story that is supposed to have happened several years ago about the Nashville Public Library is told dramatically by the late Dr. Arna Bontemps, for many years Librarian at Fisk University, in the *Library Journal* of September 1, 1963:

A group of respected and forward-looking citizens, mostly Negro ministers, decided that the time had come to strike a direct nonviolent blow for the right to read. Accordingly, they marched up the hill and entered the front door of the very temple of reading, over which the name of Andrew Carnegie was boldly displayed. While the outside of the building had long been a familiar landmark to all of them, the inside was passing strange, and for a moment they paused, wondering which way to turn. Seeing their confusion, the librarian at the charge desk smiled and asked graciously, "Is there something you gentlemen want?"

To a man, the delegation stepped forward. Their leader answered, courteously but firmly, "Yes, we want to borrow a book."

Undismayed, the librarian asked, "Which book, sir?"

Apparently this was not a question they had anticipated. In the moment of surprise and consternation that followed, not one of the ministers could think of a book to request, but they did not burst into laughter until they had retreated a safe distance outside.

Also, in *Look* magazine of December 2, 1969, is an account of Mr. John Wesley Dobbs, a railway mail clerk between Nashville and Atlanta who tells of securing books at the main Nashville Public Library for his family living in Atlanta, because the Atlanta Library was not available to Blacks. His sons, daughters, and grandchildren became very prominent, and his grandson is the present mayor of Atlanta.

To carry out the recommendations of the planning commission's study, the city in 1961 authorized and issued bonds totaling $2,350,000 for the purpose of building a new main library and four new branches. Some $200,000 from the previous bond issue for renovations was added to this amount, together with $233,000 from Library Services and Construction Act funds which was used for branch construction.

On September 1, 1962 the Nashville Public Library opened the first library reading room ever to be established in a municipal airport. The books and magazines there helped air travelers and those who waited for them to wait enjoyably and profitably. Many persons have expressed gratefulness for this service. A librarian was not on duty and the room was open 24 hours a day on the honor system. It is of interest to note that very few books were lost.

An important milestone was reached December 17, 1962 when WPLN (FM), the educational broadcasting service of the Nashville Public Library, went on the air. This was the second public library in the nation to operate a radio station. The station, broadcasting at 90.3 megacycles, operates 7 days a week, from 6:00 A.M. until midnight, and offers educational programs including plays both classic and modern, complete operas, world music festivals, lectures, panel discussions, interviews, book reviews, documentaries, and more. In 1971 the station increased its power from 15,000 to 100,000 watts and now broadcasts in stereo.

In 1963 a drastic step was taken by the voters in Nashville and Davidson County. They voted to combine the city and county governments into one government, to be known as the Metropolitan Government of Nashville and Davidson County. This made a radical change in the operation of the public library. Heretofore the library had been owned by the city. It gave service to the county residents

only those years when the county appropriated money for the library. Other years, the county residents had to pay a fee for service. Now, with the new combined government, the library was owned, operated, and supported by both the city and the county.

Also, the new government enabled the library to plan on a countywide basis, and branches could now be located in the more populated suburban areas without regard to city limit boundaries. Very soon the Goodlettsville Library and the Old Hickory Library, both operated by independent communities in the county, came into the library system, which soon officially became the Public Library of Nashville and Davidson County.

The library consulting firm of Library Building Consultants of Evanston, Illinois, was employed to make an exhaustive study of needs and draw a program for a new main library building. In 1963 the main library moved into temporary quarters at 161 Eighth Avenue North and construction of the new main library started on the site of the old Carnegie building. The new building, designed by the Nashville architectural firm of Taylor and Crabtree, was opened in 1966. The building fits in with the other public buildings of the city. It is of contemporary design but has strong classical features which give it a timeless appearance. The three-story and basement, reinforced concrete modular building is faced with white Cherokee Georgia marble. The walls on the three street sides are tall, arched windows of bronzed glass which present an inviting appearance and make the reading rooms clearly visible from the street. The building can be expanded to several times its present size. The footings were designed to accommodate four additional floors. The 70,000-square-foot building, complete with furnishings, cost $2,000,000.

The new building has many beautiful and outstanding features. The children's room is especially noteworthy. The story-hour room is a fairy-tale room of wonder and enchantment. It is a storybook, old English room with paneled walls and huge ceiling beams. A large open fireplace stands at the far end of the room, with gleaming copper and brass on the mantle and in the cupboards round about. Pieces of old blue china and shadow box displays add to the overall effect. The children's activities have always been an outstanding part of the Nashville library's program. One reason is because the internationally known author, puppeteer, and marionette performer, Tom Tichenor, is an active member of the staff and has performed in the library for over 30 years.

An additional bond issue of $350,000 plus LSCA funds of $153,000 was made available for two more branches in 1965. The Thompson Lane Branch opened in 1965 at a total cost of $124,863. The Donelson Branch opened in 1966 at a cost of $204,154. The Edgehill Branch opened in 1967 at a cost of $152,719. Three more new branches were opened—Goodlettsville Branch in 1968 at a cost of $140,000, Green Hills Branch in 1969 at a cost of $250,000, and Inglewood Branch in 1969, costing $269,423.

Another notable development at the Nashville library has been the establishment of an Area Resource Center. This is a statewide network of centers located in the public libraries in Nashville, Knoxville, Chattanooga, and Memphis. These centers

serve the entire state in making available reference service to everyone in the state. The center is in teletype communication with all of the large library and information centers across the country and proposes to get any printed data available to meet the needs of the citizens of the state. The emphasis of the centers has been to meet the needs of business and industry.

In the past 3 years the library has been involved in attempting to meet the difficult task of library service to the disadvantaged. With a federal grant, the library has gone into the poverty areas of the city, strengthening the existing branch libraries in these areas, opening a storefront branch, and opening numerous reading rooms in community centers, housing projects, and settlement houses.

The library is now developing an innovative program, using a subcarrier frequency of the library's radio station WPLN-FM, to broadcast on a closed circuit to the blind and visually handicapped. This will be a direct personal service to the individual blind person's preset receiver, reading the daily newspapers, current books and magazines, and communicating information needed by the handicapped person. This program is being financed by a federal grant and furnishes the receivers free to blind persons.

The local government has effectively supported the public library in its growth over the past 10 years. Also, the federal and state governments have contributed to the support of the system, within recent years the state contributing an ever-increasing share. At the beginning of the 1974 fiscal year, the Nashville Public Library System was comprised of its Central Main Library; 12 branch libraries, with three more in the design and building stage; three bookmobiles; an FM radio station; and numerous deposit collections and reading rooms. Its holdings were recorded as 454,165 books; 12,000 recordings; 889 films; and an excellent collection of periodicals and newspapers, microfilms, and microforms. Staff numbered 210 persons and the 1974/75 budget was $2,100,000. The system circulated 1,354,647 books during the fiscal year 1973/74.

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DAVID MARSHALL STEWART

NATIONAL AGRICULTURAL LIBRARY

Organic Act of 1862

On May 15, 1862, with the nation torn asunder by civil war, Abraham Lincoln signed into law an Act of Congress establishing a Department of Agriculture. Although the primary problem of his administration was the preservation of the Union, this was one of several pieces of legislation which were to have a tremendous impact on American farming. The Organic Act of 1862 establishing the U.S. Department of Agriculture (USDA) announced a basic mission

> to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of the word

and instructed the infant department to acquire and preserve all information concerning agriculture. This mission reflects Lincoln's own interest in and concern with access to printed materials. Speaking before the Wisconsin State Agricultural Society in Milwaukee in 1859, he noted that reading is a key to already solved problems and a stimulus to successful pursuit of unsolved ones.

Isaac Newton, the first Commissioner of Agriculture, outlined as one of the primary programs of the department the establishment of an agricultural library and museum. He expected a rich mine of knowledge to be accumulated by exchange, gift, and purchase. Thus, the library from the beginning has been one of the principal agencies in the U.S. Department of Agriculture dealing with scientific and technical information. The controlling objective in developing collections and services is the needs of the department. Since research has always been an important program of the department, the library has grown into a major research library, providing information services in support of not only all Department of Agriculture agencies, but other governmental activities supporting departmental missions as well. Moreover, as one of three national libraries in the United States (the Library of Congress and the National Library of Medicine are the other two) it provides researchers, other libraries, and the general public with specialized information in the fields of agriculture and related sciences. Library services are provided to personnel of the Department of Agriculture in Washington and the field, state agricultural agencies, agricultural colleges and universities, research institutions, individual scientists, farmers, and the general public in every part of the world.

Milestones in Development

EARLY FOUNDATION, 1839

The nucleus of the present library was a collection of 1,000 volumes transferred from the Agricultural Division of the U.S. Patent Office. The formation of this

collection had actually taken place as early as 1839. Small appropriations made possible the collection of books containing agricultural statistics. The collection was maintained as a unit and eventually transferred to the department. Additionally, the chemist of the new department made his extensive scientific library available. Chemistry is one of the basic sciences of agricultural research and the Division of Chemistry, established in 1862, was the first research unit in the Department of Agriculture. Consequently, during this early period, the library began the assembling of one of the world's most complete collections of chemical books, reports, and journals. Extensive collecting in this field has continued to this day and this rich source of chemical literature is used daily for research by chemists all over the world.

ROSTER OF LIBRARIANS, 1867–1974

The name of Aaron Burt Grosh appeared as the first librarian on the department's roster of employees in 1867. Little is known of him except that he was a clergyman and one of the founders of the National Grange.

Dr. Stuart Eldridge served as librarian from 1869 to 1871, when he left the department to participate in a medical mission to Japan. During his tenure, he also served as professor of anatomy at Georgetown University. The next librarian, John B. Russell, 1871–1877, apparently had little impact upon the library. His chief interest lay with the agricultural museum. This museum was transferred out of the library by the next librarian, Ernestine H. Stevens, 1877–1893. Her most pressing need was space in which to organize and preserve printed publications. Her successor was W. P. Cutter, 1893–1901, the first librarian to be appointed under Civil Service. Under his leadership, the USDA Library was completely reorganized, professional methods were introduced, and detailed policies were established to guide its development. Under the guidance of Josephine A. Clark, 1901–1907, the library assumed a pattern of operations that continued with little change until 1942. A system of bureau libraries evolved, which lasted until the centralization of all departmental libraries in 1940/42. One of her unique achievements was the establishment of a bibliofilm service. The next librarian, Claribel R. Barnett, 1907–1940, pioneered in the development of specific acquisition and service policies, including photocopying in lieu of loan. Dr. Ralph R. Shaw, 1940–1954, applied industrial management methods to library operations. Improvements in operations resulted from the application of electronic machines. Among his significant inventions are the photocharger, rapid selector, and photoclerk. His most scholarly achievement is considered to be the monthly *Bibliography of Agriculture*, initiated in 1942.

It was during the administration of Dr. Foster E. Mohrhardt, 1954–1968, that the USDA Library was designated the National Agricultural Library (NAL). Great administrative advances were made and plans for a new library building became a reality. During his tenure Mohrhardt rendered exceptional leadership to the international scientific and agricultural community. He played a decisive role in founding

the International Association of Agricultural Librarians and Documentalists in 1955 and served as its first president.

One of the immediate concerns of John Sherrod, 1968–1973, was the completion of the new library building at Beltsville, Maryland, and the move of the staff and collections from Washington, D.C. Automation of library operations was under development and he hastened the implementation of computer applications to the processing of library materials. As director, his major thrust was implementation of an Agricultural Sciences Information Network and encouragement of a worldwide counterpart sponsored by the Food and Agriculture Organization of the United Nations—the International Information System for Agricultural Sciences and Technology. The present director, Dr. Richard A. Farley, assumed administration of the library in July 1974.

INTERNATIONAL EXCHANGES, 1862

Large-scale international exchanges of publications developed in the mid-19th century. The Department of Agriculture Library was a pioneer in the exchange of scientific material. In 1862, the first Commissioner of Agriculture sketched the importance of exchanges to the library in his report. A few years later, he noted that a system of exchanges had been developed with foreign governments with the most gratifying results. In these early years, publications distributed on exchange by the library consisted primarily of monthly and annual reports of the Department of Agriculture. As the publications program of the department grew, more and more publications became available to the library for exchange purposes. Today, the exchange correspondents of the library number more than 11,000 institutions.

BIBLIOFILM SERVICE, 1934

As early as 1911 the library was providing copies of articles in photographic or typewritten form to its users. In 1934 an experimental project was begun under the direction of Librarian Claribel R. Barnett, in cooperation with the American Documentation Institute, to supply microfilm and photocopy of journal articles to all scientific workers. The library provided space for equipment and personnel, verified references, and assembled materials. The camera was loaned by R. H. Draeger, of the Medical Department of the United States Navy, and Dr. Atherton Seidell of the National Institutes of Health personally paid, in the beginning, for the cost of photographic material. The Information Office of the U.S. Department of Agriculture developed the film during the first 3 months of operation in its photography laboratory. The stated purposes of this project were twofold:

1. to extend the resources of the USDA Library to scientific workers without access to scientific facilities.
2. to reduce the volume of interlibrary loans by supplying copies of articles directly to requesters.

This service was immediately successful and it was evident that the heaviest demand would be for photocopy rather than microfilm. Science Service, American Documentation Institute, began development, with a $15,000 grant from the Chemical Foundation, of mechanisms needed for all phases of film copying and utilization. In 1941, Congress authorized the U.S. Department of Agriculture to undertake photocopying of library-owned materials. This special service to scientists was then absorbed by the Copying Section of the library under a cooperative agreement with the American Documentation Institute. A further development in the use of photocopy techniques was achieved in 1946 when the library worked out a joint arrangement with the American Chemical Society to provide copies of articles listed in *Chemical Abstracts*. This service was limited to members of the American Chemical Society and subscribers to *Chemical Abstracts*.

CENTRALIZATION OF USDA LIBRARIES, 1940–1942

The deficiencies of a decentralized library were obvious from 1920 onwards, despite the high quality of service provided. It was not until 1940, however, that official cognizance was taken of this situation. "Office of the Secretary Memorandum No. 808 (revised)" provided for the centralization of five basic library responsibilities—supervision, coordination, appointments, procurement, and evaluation—in order to avoid duplication of services and acquisitions. Consolidation of library services was further accomplished in 1942, when two bureaus of the department were ordered out of Washington to make room for the prosecution of the war. In "Memorandum No. 973" the Secretary of Agriculture stated that the agricultural library resources were threatened with dissipation by the removal of bureaus out of Washington unless a centralized plan of management was quickly adopted. He went on to state that

> Not only is the basic injunction of Congress to the Department that it maintain a national library on agricultural subjects likely to be thwarted if evacuated bureaus take with them the library materials now housed with them, but the services by these libraries to other bureaus in the Department, which because of close ties to professional subject matter they have always rendered, will be seriously disrupted by distance, delays, and excessive costs. A plan of library policies and administration to furnish strengthened field library services, while maintaining the basic and essential library materials together in Washington, can only be satisfactorily developed and implemented by a central Department library controlling all our library resources.

President Roosevelt followed this up on February 25, 1942 with "Executive Order No. 9069," stating

> To further the successful prosecution of the war through the better utilization of agricultural resources and industries . . . All libraries administered by agencies of the Department of Agriculture and all units of the Department providing library and bibliographical service and their functions, personnel, property, and records are consolidated and shall be administered through such facilities of the Department as the Secretary of Agriculture shall designate.

This executive order was implemented by "Memorandum No. 973, Supplement 1," issued by the Secretary of Agriculture on February 26, 1942. This document outlined the functions and responsibilities of the librarian:

> The Department Librarian is responsible for the effective administration of all library facilities and services of the Department. He is to supervise the collection of current and historical printed material and its organization in the Library, and to devise and maintain a system by which the Department Library system will render maximum service; he is finally responsible for the operation of all libraries administered by agencies of the Department of Agriculture and all units of the Department providing library and bibliographical services, and for the determination of present and long-term needs of the Department for library and bibliographical services. He represents the Department on all library and bibliographic matters.

The centralization was viewed by the department as a centralization of physical resources. Collections housed in various agencies of the department were brought together in one physical location. Librarians were transferred from the agencies to the main library. The implementation of this action was fraught with some tension, as the agencies which had developed and controlled their libraries as bureau operating units for over 50 years were understandably reluctant to see them merged into a central library. Dr. Ralph Shaw, then director, visualized centralization, however, as an opportunity to expand library services to all members of the department. Speaking before the Organization and Procedure Conference of the Department of Agriculture, December 13, 1943, he presented this plan:

> By and large, the first problem has been one of concentration of a basic unit, the Library, and the decentralization of that basic unit to every man's desk.

Today, the library services of the National Agricultural Library are carried out through the main library located at Beltsville, Maryland, and through a branch library in Washington, D.C., which houses the law collection and social sciences materials. A special Tri-Agency Reading Room in the D.C. area provides specialized reference and browsing services to USDA's Farmer Cooperative Service, Economic Research Service, and Food and Nutrition Service.

In addition, several agencies of the department maintain and finance their own libraries. These libraries are situated at field locations where concentration of work and research staff warrants on-site library services. The Director of the National Agricultural Library prescribes library policy, standards, and procedure for these field library services and exercises such controls as are needed to coordinate services in the department.

BIBLIOGRAPHY OF AGRICULTURE, 1942

The National Agricultural Library has pioneered since its beginnings in the dissemination of agricultural knowledge through published bibliographies.

The first Commissioner of Agriculture laid equal stress on the dissemination of information and its collection. The rather traditional methods of lists and indexes were employed. Quarterly and monthly library bulletins were issued between 1894 and 1913. Special lists, bibliographies, and notes of accessions were a regular feature of these bulletins. Printed lists of books on botany, irrigation, entomology, and forestry owned by the library were issued from 1902 to 1909. *Agricultural Library Notes,* issued from 1926 until 1942, contained, in addition to accession lists, historical and descriptive articles of interest to librarians. Other guides to the agricultural literature resources were provided by the bureau or agency libraries of the Department of Agriculture. These issuances included *Agricultural Economics Literature, Current Literature in Agricultural Engineering, Entomology Current Literature,* and *Plant Science Literature.*

With the centralization of physical library resources in 1942, the consolidation of the various bibliographies was inevitable. The *Bibliography of Agriculture* was thus born out of a war-time need to redirect, consolidate, and disseminate the results of foreign and domestic research promptly and efficiently. In addition to consolidating the subject coverage of existing lists, the *Bibliography* undertook coverage of two additional subject areas: animal husbandry and food processing. The *Bibliography* has been published monthly since 1942, drawing upon the rich and varied resources of the NAL. It is an index to the serial literature pertaining to agriculture in all its aspects. From the year 1942 through 1969, all important books and articles published throughout the world and acquired by the library were listed. An impressive total of almost 100,000 citations to separate articles per year was eventually achieved in the 1960s decade. The *Bibliography of Agriculture* indexes worldwide literature of substantive interest to agriculturists and others in allied fields; it brings to these workers the current agricultural literature resources of the National Agricultural Library. Beginning in 1970, publication of the *Bibliography* was assumed by Macmillan Information, a division of Macmillan Publishing Company, Inc. In 1975, publication was assumed by Oryx Press, Scottsdale, Arizona. The published *Bibliography* is based upon the indexing records prepared by the NAL for its CAIN (Cataloging and Indexing) computer system.

NATIONAL STATUS, 1962

Although the library had been functioning as a national library since its inception, it was not until 1962, the centennial of the founding of the department, that it acquired national status. On March 23, 1962 the Secretary of Agriculture, Orville J. Freeman, issued "Secretary's Memorandum No. 1496" designating the U.S. Department of Agriculture Library as the National Agricultural Library recognizing that

> . . . the Library of the Department of Agriculture is, next to the Library of Congress, the largest Government library in existence. The information contained in the collection is disseminated through bibliographies, loans, photocopies, and reference services to agricultural colleges and universities, research institutions, Gov-

ernment agencies, agricultural associations, industry, individual scientists, farmers and ranchers, and the general public in the United States and in every part of the world. From the date of its inception the Library of the Department of Agriculture has served as a national library, and is generally considered today as the National Agricultural Library. It is appropriate and fitting, therefore, as we observe the centennial of the founding of the Department, that the national scope of its collections and services be recognized in its name. Accordingly, the Library of the Department of Agriculture is hereby designated, and shall be known as the National Agricultural Library.

PESTICIDES INFORMATION CENTER, 1965

The Pesticides Information Center was established in 1965 as a facility in the U.S. Department of Agriculture's stepped-up program of research and education in the field of pest control. As a governmentwide information analysis center, it collected, indexed, analyzed, and disseminated pest control information. An important resource of the center was a biweekly publication, *The Pesticides Documentation Bulletin*, which inventoried the literature in pest control fields and disseminated it to scientists and other interested personnel in federal and state government, and private and industrial organizations. From 1965 to 1969 the *Bulletin* facilitated national research efforts in all aspects of pest control. Subject coverage included diseases, insects, nematodes, parasites, weeds, and other pests affecting plants, animals, humans, natural resources, and other values in our environment. Special emphasis was given to the literature on toxicological, physiological, and epidemiological aspects of pests and their control by chemical, biological, and integrated methods.

The center represented the first attempt by the library to completely mechanize one of its major operations. The publication of the biweekly *Pesticides Documentation Bulletin*, as well as the preparation of specialized bibliographies, was placed under computer control. Both the center and the *Bulletin* were terminated for fiscal reasons in December 1969.

NEW BUILDING, 1969

The cornerstone for a new building to house the National Agricultural Library at the Agricultural Research Center, Beltsville, Maryland, was laid by Secretary of Agriculture Orville J. Freeman, September 28, 1967. The move took place in the spring of 1969. Prior to occupancy, the NAL had been located in the main agriculture complex at 14th and Independence Avenue S.W., Washington, D.C.

An impressive 15-story tower of precast concrete and rock-faced brick houses the collection of 1.5 million volumes on agriculture and supporting sciences (see Figure 1). Location of the bookstacks in the tower and utilization of a vertical book conveyor permit rapid delivery of material from the shelf to the scientist. An adjoining two-story wing provides space for technical personnel to develop scientific management of literature resources and expand specialized services to

FIGURE 1. *National Agricultural Library (USDA photograph).*

research people. The tower and wing buildings provide 275,000 square feet of space. The exterior and interior building materials of rock-faced brick and precast concrete were selected to denote the masculinity of agriculture. Orange, brown, and green colors are used in the interior decorative scheme to further carry out the concept of agriculture as an earth science.

The lobby provides an impressive setting for books and other agriculturally oriented exhibits. Two permanent glassed-in display areas illustrate old and new concepts of librarianship. The old, or traditional, is represented by fine specimens of rare books on permanent display. The second glassed-in area affords a view into the computer well and illustrates the use of new technologies in the operation of the library. A closed-circuit television in the lobby provides security for the collection without invasion of the personal privacy of the user. Visitors to the 14th floor enjoy the panoramic views of the Agricultural Research Station. This floor affords spacious facilities for conferences, seminars, and workshops, and houses the Poultry Hall of Fame of the American Poultry Historical Association.

ASSOCIATES NAL, INC., 1969

The Associates of the National Agricultural Library, Inc. is a "friends of the library" organization dedicated to fostering interest in the NAL and its collections,

facilities, and needs; with the aim of advancing the collection, organization, and dissemination of agricultural knowledge for the benefit of the people of the United States of America and the world. This group was incorporated in 1969 under the laws of the State of Maryland as a nonprofit organization. Membership is open to all persons, academic/research institutions, and businesses with an interest in the library and its objectives and services. The objectives of the associates are:

To encourage gifts to and desirable collections for the library.

To provide direct financial assistance by purchasing for the library special and unusual items which would be of great benefit but cannot be purchased from appropriated funds.

To aid in public relations by:

Informing the community about the library's services and problems;

Communicating the needs of the community to the library staff;

Calling public attention to outstanding achievements of the library's staff.

PUBLICATION OF THE DICTIONARY CATALOG, 1965–1970

Announcement of the publication of the Public Card Catalog of the National Agricultural Library in book form was made by Secretary of Agriculture Orville J. Freeman in mid-1965. Titled *The Dictionary Catalog of the National Agricultural Library 1862–1965*, it contains entries by author, title, and subject for all books and journals added to the NAL collection from 1862 through 1965. These publications have been secured from all parts of the world, some issued as early as 1500. The *Dictionary Catalog* is complete in 73 volumes. It is supplemented and updated by the monthly *National Agricultural Library Catalog*, beginning January 1966. Each month, all books, periodicals, and serials added to the collections during the previous month appear in the *Dictionary Catalog*. A quinquennial edition for the years 1966–1970 has also been published. Reproduced from the library's divided card catalog, the entries are arranged alphabetically under Names (authors and titles) and Subjects (topical headings). Information cards, such as those describing the history of a corporate body or geographic area are included, as well as author and subject cross-references.

GIFT LEGISLATION, 1970

Public Law 91-591, which became effective December 1970, authorizes the Secretary of Agriculture to accept, receive, hold, and administer on behalf of the United States gifts, bequests, or devises of real and personal property made unconditionally for the benefit of the National Agricultural Library or for the carrying out of any of its functions.

Congressman Fred Schwengel (D, Ia.) and Senator Robert J. Dole (R, Ks.) were sponsors of the legislation. The James M. Gwin Poultry Collection was the first substantial gift received by the library under this instrument.

CAIN ONLINE, 1973

A computer group was formed at NAL in 1964; its initial activity was in developing systems to prepare voluminous indexes for the *Bibliography of Agriculture,* the complete *Pesticides Documentation Bulletin,* and categorical and alphabetical volumes of the *Agricultural/Biological Vocabulary.* During 1969 these systems were consolidated and expanded so as to process all input data within one coordinated set of parameters. The new Cataloging and Indexing System (CAIN), implemented January 1970, was a broad-based, comprehensive batch mode system designed to meet many library requirements. Two major publications are prepared by trade publishers from CAIN data: *The National Agricultural Library Catalog* and the *Bibliography of Agriculture.* Both are published monthly. The NAL machine-readable data base was placed online in the summer of 1973. Specifications called for a 150,000 record file initially, with additions on a monthly basis. Requirements included the ability to handle many terminals with simultaneous interrogation and a high-speed reaction time. CAIN online is an interactive bibliographic search and retrieval system to the CAIN data base. This data base now includes all bibliographic records, numbering more than 800,000 entered into the CAIN data base beginning in 1970, plus pesticides data acquired in 1967-1969. Beginning December 1973, records of material in the library's Food and Nutrition Information and Educational Materials Center, with abstracts, are entered into the CAIN system.

Services and Products

Library activities are divided into two basic organizational groupings. Input functions embracing acquisitions, cataloging, and indexing are grouped under Resource Development. Library Services, or output functions, embrace the loan of materials and reference assistance.

NAL DOCUMENT COLLECTION

The document collection currently numbers 1.5 million volumes and covers such related subjects as botany, chemistry, entomology, forestry, food and nutrition, water resources, and economics. All substantive publications of the U.S. Department of Agriculture and reports of research supported by department funds are included in the collection. Additionally, the library acquires publications in some 50 languages and from more than 120 countries and other governmental jurisdictions.

POLICY ON COLLECTION FORMATION

Document collection policies are closely coordinated with the other two national libraries—the Library of Congress and the National Library of Medicine—and the libraries of the land-grant universities. In general the acquisition program and policy are based upon the library's responsibility to provide service to the staff of

the U.S. Department of Agriculture, the land-grant institutions, and the general public in subjects pertaining to agriculture and the allied sciences. The library is primarily a specialized research library and the ultimate source in the United States for the agricultural literature of the world. This responsibility has been recognized by the Library of Congress and the National Library of Medicine, which depend upon the National Agricultural Library to acquire and preserve a comprehensive collection of the agricultural literature from all countries.

In fulfilling its obligations, the NAL attempts to collect all significant publications of definite agricultural interest and others of value to the work of the USDA. Its collections, accordingly, reflect and support agricultural research needs in general, as well as research programs currently in progress in the department. For scarce or rare materials, or material of peripheral interest, the holdings of other libraries are taken into consideration.

Serials are the most important materials acquired by a scientific research library. Prime emphasis is placed on this form of publication. Current monographs (i.e., books) are vigorously sought. Earlier historic monographs are acquired, but consideration is given to the facilities, capabilities, and responsibilities of other libraries. As a result of the general acquisition program, a collection of more than 6,000 historic volumes has been acquired. Most of these volumes are in the field of botany and include fine volumes of lithographs, as well as a strong collection of the original works of Linnaeus. Other forms of publications acquired include catalogs of commercial horticultural firms, government documents, maps, and microforms.

HERD BOOK COLLECTION

This collection contains an irreplaceable record of the history and background of the leading breeds of farm livestock, as well as a complete record of the breeding of animals. These books of record on purebred registration consisting of herd, stud, and flock books are issued by registry associations. The records are required to be issued at intervals of not less than 3 years, and contain data on registered purebred animals of recognized breeds. Exclusive of poultry, the entire Herd Book Collection numbers 8,700 volumes comprising about 560 titles. Retrospective as well as current material is preserved. The collection of the *General Stud Book*, a register of horses, dates back to 1799; the *American Kennel Club Stud Book* of dogs dates back to 1878; the *National Pig Breeders' Association Herd Book*, a register of swine, dates back to 1885. The *Holstein-Friesian Herd Book*, a register of cattle, begins with 1846; the *Nederlandsch Rundvee-Stamboek* dates back to 1875. The scientific data in these books deal in detail with the evolution and establishment of these breeds and afford to scholars valuable material for the establishment of improved and superior livestock.

HORTICULTURAL TRADE CATALOGS

A rich collection of historical and current seed and nursery trade catalogs was established over 70 years ago through the efforts of Percy L. Ricker, economic

botanist with the U.S. Department of Agriculture. The earliest list in the collection is a foreign one, a photoprint reproduction of a list of seeds and plants issued in 1769 by Vilmorin-Andrieux of Paris. The collection has catalogs from this firm covering the period from 1878 to 1940. The earliest foreign catalog is an English one, Robert Furber's *Catalog of Curious Trees and Plants*, 22 pages. It was issued without a date, bound with Philip Miller's *Gardener's and Florist Dictionary*, edition of 1724. The oldest American catalog in the collection is a photoprint copy of a list issued by the William Prince Nursery, dated 1771. Other 18th-century catalogs of which there are photoprint copies are those issued by William Prince, dated 1790, 1793, and 1799; and John Bartram and Co., 1790. The earliest original American catalogs in the collection are those issued by Bernard M. Mahon of Philadelphia, published in 1804; Steadman and Floy, 1806; and John Bartram and Son, 1807.

CHARLES E. NORTH PAPERS

In November 1969, the family of Dr. Charles E. North (1869–1961) deposited in the library his papers, containing patents on processes and devices, notes of research, and letters dealing with a variety of subjects spanning the first half of the 20th century. Dr. North served as bacteriologist and consultant on clean milk and pollution to state and local governments; he was a pioneer in the dairy industry, and a leader in gaining public acceptance of milk pasteurization. He invented processes and machines for dehydration and reconstitution of milk products and wrote numerous reports and papers on bacteriology, public health, and sanitation.

JAMES M. GWIN POULTRY COLLECTION

This collection contains books on poultry from every state in the Union and from 42 foreign countries. A unique aspect is the great amount of commercial and allied industrial material. Complete files of catalogs from manufacturing firms, such as incubator catalogs, have been assembled. Separate files have been created for individual firms. This material, usually sent to prospective customers and handed out at trade exhibits, is quite important to the history of the industry. There are many files covering the early breeders in the poultry industry. Posters, signs, and similar materials concerned with the progress of the poultry industry illustrate the efforts of Federal and State Extension Services, as well as commercial buyers, to improve quality of eggs sold to consumers. Among the special books in this collection are the eight editions of Bonington Mowbray's *Domestic Poultry* published between 1815 and 1842, a leading textbook of the period. One of the pioneer American books is the *American Poultry Book*, published in 1843. Three works by the much quoted Gervase Markham—*The Country Farm*, 1616; *Husbandmans Recreations*, 1683; and *Inrichment of the Weald of Kent*, 1683—are the most valuable, as well as the oldest, works in the collection. Another phase of the collection is trade association material. There are large files on the American Poultry

Association, Poultry Science Association, World's Poultry Science Association, American Poultry Society, The National Poultry Butter and Egg Association, Institute of American Poultry Industries, International Baby Chick Association, Northeastern Poultry Producer's Association, and others.

AERIAL PHOTOGRAPHS OF U.S. ARABLE LANDS

A collection of historical aerial photographic maps of arable land in the United States was deposited in the National Agricultural Library by the USDA Agricultural Stabilization and Conservation Service (ASCS) in 1970. The collection consists of 20,000 maps photographing all arable land in 3,000 counties of the United States. These aerial photographs were made between 1940 and 1958. ASCS plans to add an annual increment of approximately 1,000 photographs to this aerial map collection.

PROCESSING SYSTEM

The input functions of the library are grouped under the direction of a Deputy Director for Resource Development. Two divisions make up this branch: acquisitions and analysis. Acquisitions Division develops policies and plans, and conducts a program to acquire library material and publications in accordance with the Organic Act establishing the department. Its Selection and Searching Section makes preliminary selections of titles and determines sources of procurement. The Acquisition Division maintains a program of publication exchanges with agricultural libraries and related organizations abroad to obtain important documents not available through commercial trade sources.

The Analysis Division conducts a program to organize and prepare acquired materials for use. The Cataloging Section prepares bibliographical descriptions of newly acquired publications and other forms of research materials. It develops cataloging quality control procedures and maintains the public catalog, the index to all publications in the NAL collections.

The Indexing Section analyzes and classifies acquired materials. It is responsible for review and title enrichment of journal articles selected for the CAIN data base.

DOCUMENT DELIVERY SYSTEM

Among the basic services available in varying degrees to all libraries and agricultural science workers are loan, extensive interlibrary loan, and photographic reproduction of library-owned materials. The Lending Division develops policies and plans to provide for the loan of library materials. Its Utilization Section provides documents in response to requests by loan, photoreproduction, or telecommunications and maintains a circulation control system. The Maintenance Section manages the book, periodical, and microform collection through shelving, retrieving, weeding, and preserving.

The National Agricultural Library will lend books, in response to job-related requests, to all USDA employees. The NAL will also lend books to other libraries within the provisions of the National Interlibrary Loan Code, 1968. Periodicals and other noncirculating materials are not available for loan, but may be used in the main library or its designated reading rooms. Publication requests may be submitted in person, by mail, by telephone, and by telecopier.

The loan period is 1 month, unless a shorter period is specified. All publications are subject to recall without advance notice. Renewal for one additional month may be granted if the renewal request is received prior to the due date.

Electrostatic copy of journal articles is supplied to USDA employees in lieu of loan. Paid copy service, including electrostatic copy or microfilm, is available to other individuals and institutions from the Photocopying Service.

SPECIALIZED REFERENCE SERVICES

The Reference Division serves technical agricultural information requirements through bibliographies, topical reading lists, state-of-the-art surveys, and other types of reference services. In-depth specialized reference services are available through liaison representatives and through the building and servicing of specialized collections. Extensive literature searches of the current collections are available through the use of the CAIN online system.

In addition to CAIN, the NAL Serials Data Base of 24,000 titles has been put into machine-readable form. The Serials Data Base is being exploited for two major purposes: to expedite reference services and to improve document delivery. A variety of lists of serial titles to implement these objectives can be issued for internal or external use.

A "Memorandum of Understanding" between NAL and the National Library of Medicine provides direct access to medical literature sources for agricultural scientists and researchers. A MEDLINE terminal was placed in operation at NAL on November 19, 1973.

Terminal facilities for JURIS (Justice Retrieval and Inquiry System of the U.S. Department of Justice) were established in the D.C. branch facility. This system presently provides access to significant briefs and memos from the Justice Department back to January 1972, 10 years of Supreme Court decisions, and Solicitor General briefs to the Supreme Court from February 1973.

A number of other data bases are currently accessed by NAL for the benefit of its users through online commercial systems.

FOOD AND NUTRITION INFORMATION CENTER

The Food and Nutrition Information and Educational Materials Center is designed to disseminate information on food service training. The center is developed cooperatively by the National Agricultural Library and the Food and Nutrition Service of the U.S. Department of Agriculture.

The center assembles and maintains a collection of materials useful in training personnel for food management of child nutrition programs, school lunch, breakfast, and other nonschool food service programs. The staff provides training material for loan to school and other food service personnel. The collection includes film, video cassettes, programmed instructional material, audiotapes, manuals, guides, pamphlets, books, and journal articles.

In addition, through the center, users have access to the total resources of the National Agricultural Library. The center is designed primarily for use by USDA personnel, state school lunch directors and staff, and local system school food service supervisors. The products and services are available to persons involved in food service training programs, to colleges and universities offering degrees or diplomas in school food services, and to organizations interested in training materials.

The center provides a catalog to current holdings, categorized to show the collection's coverage, reference service on food service subjects, and lists of known sources of self-instruction or other equipment applicable in this specialized training area. It cooperates with organizations such as the American School Food Service Association and the Society for Nutrition Education, correlating information and services. Direct loan of materials from the collection is made to USDA personnel and state educational agency food service training specialists. Referral service to other information centers, with interlibrary loan, is made where feasible.

Library Cooperation

THE THREE U.S. NATIONAL LIBRARIES

In the interest of efficiency and economy, and to eliminate duplication of effort to the fullest degree possible, the National Agricultural Library, the National Library of Medicine (NLM), and the Library of Congress (LC) have developed both formal and ad hoc arrangements for cooperation in a number of activities. Two of these areas of cooperation are acquisitions and cataloging. Publications received by the Library of Congress from any source in the area of technical agriculture or clinical medicine are transferred to the respective subject libraries. Various regional programs operated by the Library of Congress benefit the National Agricultural Library. Under P. L. 480 (Agricultural Trade Development and Assistance Act of 1954), the Library of Congress has conducted a program to buy publications abroad with United States-owned excess foreign currencies. Under this program, the National Library of Medicine and the National Agricultural Library share with the Center for Research Libraries in Chicago comprehensive sets of monographic and serial publications from India, Nepal, and Bangladesh and from the Library of Congress regional acquisition center in Southeast Asia. Agricultural materials acquired by the Library of Congress as gifts or exchanges through LC's regional acquisition centers in Rio de Janeiro and Nairobi are forwarded without cost to

NAL. Under the National Program for Acquisitions and Cataloging (NPAC), the Library of Congress shares with the NAL and NLM the prepublication cataloging data of foreign national bibliographies from 24 countries. Monographic publications acquired for the National Agricultural Library by its dealers in Western Europe are processed by overseas LC-shared cataloging centers, which prepare the preliminary cataloging copy for these books and send the data with the books to Washington along with LC's own purchases. NAL books are then forwarded, together with preliminary cataloging data, to the National Agricultural Library. Copies of those technical agricultural books not acquired by LC are given preliminary processing by NAL and then loaned to the Library of Congress for complete cataloging.

FEDERAL LIBRARY COMMITTEE

The National Agricultural Library is an interested supporter of the Federal Library Committee activities. An example of one of the activities is the funding of an experiment in utilizing cataloging data obtained by online access to a large data base maintained by the Ohio College Library Center (OCLC) in cooperation with other federal government libraries. This experiment with interfacing and connecting the OCLC data base and existing supporting systems to a national automated telecommunications service system will provide user federal libraries with online access to the OCLC data base through local telephone connections and will provide each user library with online cataloging data.

U.S. NATIONAL LIBRARIES TASK FORCE

The National Agricultural Library is cooperating with the U.S. National Libraries Task Force on Cooperative Activities in improving services to scholars and researchers. In focusing on cooperative activities, the task force seeks to eliminate repetitive and duplicative activities among the three national libraries and to provide, through example and accomplishment, guidelines to other libraries in such areas as automation, cataloging, and acquisitions.

Relations with the Land-Grant University Libraries

AGRICULTURAL SCIENCES INFORMATION NETWORK

The growth of agricultural literature has been such that only a sustained and systematic cooperative effort can ensure the organization and dissemination of this knowledge for access by all users. An informal network of information agencies in agricultural subjects already exists. These comprise libraries, specialized information centers, and related activities both in the land-grant universities and the U.S. Department of Agriculture. Because of a great need for more formal ties among these heterogeneous activities, the Agricultural Sciences Information Net-

work was established. Its objectives are better dissemination of information, more cohesiveness of cooperative efforts, and a sharing of resources.

NATIONAL AGRICULTURAL LIBRARIES NETWORK

On the national level, the library has supported the establishment of a National Agricultural Libraries Network embracing libraries of the 69 land-grant universities, a number of large public libraries, some of the larger U.S. government libraries, and the NAL. This nationwide information network provides a structure upon which the more comprehensive Agricultural Sciences Information Network will evolve.

"Memorandums of Understanding" have been signed with many of the land-grant university libraries for the retention of state agricultural documents. Land-grant libraries will collect, store, and provide ready access to complete files of the major serial publications of their state agricultural experiment stations, extension services, and colleges of agriculture. These files will be identified as the National Resource Copies for NAL access and as such will be kept in near perfect condition and in the original format. The National Agricultural Library will serve as co-ordinator for completion of state sets and discarding of files.

Document delivery is an important aspect of the National Agricultural Libraries Network. The University of Georgia, in cooperation with the universities of Louisiana, Mississippi, and South Carolina, now delivers documents to U.S. Department of Agriculture employees in the South. This project utilizes existing facilities of the land-grant institutions and the USDA agency field libraries within the region as a resource network to supply documents to USDA personnel located in the area. USDA personnel submit document requests directly to their responsible USDA field library or the nearest land-grant institution library in their state. The receiving library fills the request, if possible, and mails the requested document directly back to the requestor. Unfilled requests are referred to the largest land-grant library in the state for completion. The largest land-grant library in a state acts as the resource library for that state. Requests which cannot be promptly completed at the largest state land-grant institution library are channeled to the University of Georgia libraries, which acts as both the resource for Georgia and as the six-state regional resource center. State resource libraries attempt to complete all requests coming to them, when easily identified, and when the bibliographic resources for verification are immediately available. Otherwise, the regional resource performs the verification and the identification of locations for borrowing. Requests which are not filled at the University of Georgia are teletyped to the National Agricultural Library as the final resource. Similar document delivery projects have been initiated in other areas of the United States.

International Cooperative Activities

AGRIS

Since 1969, the National Agricultural Library has urged the Food and Agriculture Organization (FAO) of the United Nations to assume a coordinating role in

the development and operation of a worldwide system for agricultural information similar to those in operation for chemistry and atomic energy. The pilot phase for implementation of this international Information System for Agricultural Sciences and Technology (AGRIS) began in March 1973 under FAO sponsorship. One tangible demonstration of progress was the publication in 1973 of an experimental issue of *Agrindex*, an international index to world agricultural literature. The NAL contributed 3,000 citations to articles in U.S.-published journals. The input from the library was processed and merged with data from other countries. This experimental issue of *Agrindex* contained nearly 7,000 entries referring to a worldwide sample of current conventional and nonconventional literature.

AGLINET

A second phase in the development of this system is the implementation of the international Agricultural Libraries Network (AGLINET). The library agreed to serve as a regional center for the network in October 1973. It will provide the traditional interlibrary loan, reference/bibliographic, and reprographic services to member libraries of AGLINET. The agreement is in force as of January 1, 1974.

Conclusion

The future growth of the National Agricultural Library is oriented toward close cooperation with the entire agricultural community both on the national and international scene. Communication of agricultural information will utilize sophisticated automated programs, as well as traditional means. In achieving closer working relationships with all spheres of agricultural research and industry, the NAL will tend to act more and more as a clearinghouse. The original mission statement of 1862 directed the collection and dissemination of useful information on agricultural subjects. Rather than attempting to become a complete and exhaustive storehouse of agricultural knowledge, the National Agricultural Library will rely on a network system or partnership with other agricultural libraries, each with its own special responsibilities. For this network, however, the National Agricultural Library will continue to be a library of last resort.

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LEILA P. MORAN

NATIONAL ARCHIVES (UNITED STATES)

The beginnings of record keeping in our emerging nation were auspicious. The scholar–patriot Charles Thomson was appointed secretary of the Continental Congress when it met for the first time in Philadelphia in 1774. A meticulous organizer, he was to remain in that demanding position until 1789 when independence had been won and the lasting union of states formed. Retrospective tribute to Thomson was paid a century later by the head of the Bureau of Rolls and Library in the Department of State. Writing in 1884 from the room in which Thomson's records were then kept, Theodore F. Dwight observed:

> To him we owe the preservation of all the records of the Continental Congress—not only for the Journals, but all those fragments now so precious, e.g., the original motions, the reports of committees, the small odds and ends, which are the small bones of history.

Thomson was the godfather of archivists as well as of committee staff directors.

Careful attention to the records of the federal government in the years after Thomson had departed from public service was not always the rule. In fact, neglect was common. One hundred and forty-five years were to elapse before the act creating the National Archives of the United States government was signed by President

Franklin D. Roosevelt on June 19, 1934. The first archivist of the United States was appointed on October 10 of that year, a staff was assembled, and the enormous task of inventorying the accumulation of the records of the nation from its formative years was begun. Although many records of value were found in suitable space, others were traced to makeshift shelves and bins in attics, basements, and garages. As their successors do today, the early archivists went about their business of appraising records to cull those of but transient value, of accessioning those of lasting worth, of describing and arranging the latter, of restoring those which had deteriorated or were damaged, and of making the records available for use.

"National Archives" has several, connected, meanings. In one sense, it is the name for the body of federal records which have been preserved because they are deemed to be of permanent value. At this writing, there are 1.2 million cubic feet of such records. There are about 2,500 pages of textual material in a cubic foot, but more than textual records are preserved. In addition to the millions of textual documents, holdings include 1.7 million maps, 4.8 million still pictures, 82,000 reels of motion picture film, and 70,000 sound recordings.

In another sense, "National Archives" identifies the massive building in the classic style which occupies a block bound by Pennsylvania and Constitution Avenues and Seventh and Ninth Streets, Northwest, in the Federal Triangle halfway between the White House and the Capitol in Washington, D.C. Designed by John Russell Pope, the National Archives building was begun before there was an agency to administer it. Ground was broken on September 9, 1931, and President Herbert Hoover laid the cornerstone on February 20, 1933. Occupancy began in November of 1935. Faced with Indiana limestone, the structure has 72 Corinthian columns of the same material, each weighing 95 tons. Inside, there are 21 levels of stack areas for the records. They are carefully controlled for temperature and humidity and equipped with smoke detection devices and a sprinkler system to protect against fire. In addition to the miles of stacks, there is office space, laboratory space, a theater, and the 75-foot-high rotunda in which visitors view the Declaration of Independence, the Constitution, and the Bill of Rights, which are on permanent display along with lesser documents of America's formative years.

In still another sense, "National Archives" is shorthand for the National Archives and Records Service which operates the federal archival system. The National Archives was an independent agency until 1949, when it was assigned records management as well as archival responsibilities to help the federal government cope with the rising tide of paperwork and, at the same time, was made a part of the new General Services Administration which was created on the recommendation of the Commission on the Reorganization of Government (the first Hoover Commission). The National Archives and Records Service has 22 different institutions: there is the National Archives itself, records, staff, and building in Washington, D.C.; the Washington National Records Center in suburban Suitland, Maryland; the National Personnel Records Center in St. Louis; 13 regional Federal Archives and Records Centers in, or in the environs of, Atlanta, Boston, Chicago, Dayton (Ohio), Denver, Fort Worth, Kansas City (Missouri), Los Angeles, Mechanicsburg (Pennsylvania),

New York City, Philadelphia, San Francisco, and Seattle. Each of the regional records centers has an archival branch except Dayton and Mechanicsburg. The remaining six institutions in the National Archives are the Presidential Libraries: the Herbert Hoover Library at West Branch (Iowa); the Franklin D. Roosevelt Library at Hyde Park (New York); the Harry S. Truman Library at Independence (Missouri); the Dwight D. Eisenhower Library at Abilene (Kansas); the John F. Kennedy Library, temporarily housed at Waltham (Massachusetts); and the Lyndon B. Johnson Library at Austin (Texas).

The National Archives and Records Service also administers a governmentwide records management program and edits and publishes the daily *Federal Register*, the *Code of Federal Regulations*, slip laws and the cumulative *United States Statutes at Large*, the *United States Government Manual*, the *Weekly Compilation of Presidential Documents*, and the *Public Papers of the Presidents*. Among other functions of the National Archives and Records Service is the operation of the National Audiovisual Center, which sells and rents, for other federal agencies, their motion pictures, film strips, slides, and tapes.

The archivist of the United States, who is appointed by the administrator of General Services, heads the National Archives and Records Service. He is assisted by a deputy and an executive director. The executive director is the business manager of the organization, with responsibilities for administrative management and technical services. There are six other major organizational elements, the offices of: the National Archives, Federal Register, Federal Records Centers, Presidential Libraries, Records Management, and Educational Programs. Each is headed by an assistant archivist. There are division and branch structures in each of the offices. For example, in the Office of the National Archives there are 10 divisions: Central Reference, Civil, Military, General, Cartographic, Audiovisual, Printed Documents, Machine-Readable, Records Declassification, and Special Projects, the latter including the Center for Polar Archives, the Territorial Papers Branch, and the Center for the Documentary Study of the American Revolution—established to coordinate research on the Revolution during the Bicentennial period.

In the total system there are more than 13 million cubic feet of records, but nearly 12 million are in the record center sections of the Federal Archives and Records Centers and most of those records will be disposed of when they outlive their usefulness. They are kept in the low-cost centers for ready reference, by the originating agencies, but only a small percentage will be accessioned into the National Archives. Only 1 to 3% of the records created by agencies of the federal government find their way into the body of records known as the National Archives, in which records from all three branches of the government are represented. Since the National Archives was founded, it has had jurisdiction over the older records of the Executive Branch and by agreement has come to serve as the depository for records of the Judicial and Legislative Branches.

Executive agencies are required by law to document structure, procedures, and important actions and these records are taken into the National Archives along with others that meet appraisal standards. They are assigned to the more than 400 record

groups in the National Archives. Agency records must be turned over to the National Archives when they are 50 years old, but, in practice, most are received much sooner. In line with archival principles, they are kept as nearly as possible in accordance with the structures of the originating agencies.

Researchers desiring to consult records in the National Archives register with the Central Reference Division, which is in charge of the Central Research Room and the Microfilm Research Room. Research consultants are available for assistance. There are guides, lists, inventories, indexes, and other finding aids to assist the researcher in his quest. In 1974, a new general *Guide to the National Archives of the United States* and a revised *Catalog of National Archives Microfilm Publications* were published. There are facilities for obtaining photographs, photostats, or microfilm copies of documents for modest prices. Printed facsimiles of many historical documents in the National Archives may be purchased. Researchers are welcome as well at the regional archives branches and the Presidential Libraries. The archives branches not only have original records of regional interest, including Federal District and Circuit Court records, but also microfilm copies of some of the most important records in the National Archives in Washington. The microfilm is available for interinstitutional loan. The Presidential Libraries hold presidential papers and other donated materials, and they have museum sections which attract large crowds of visitors. Researchers can obtain lists of holdings from the individual archives branches and Presidential Libraries. Researchers can keep up-to-date on accessions and openings of records in the various depositories of the National Archives and Records Service by consulting lists published in the quarterly *Prologue: the Journal of the National Archives.* The lists are carried by some other scholarly journals.

Researchers have access to the National Archives staff library, which has some 170,000 volumes. The library emphasizes United States history, government, politics, and biography as well as archival science, current records, and historical manuscripts. Also available for use is the Printed Archives collection containing 1.8 million items, comprising the record set of publications of the federal government. The collection formerly was maintained by the Government Printing Office (GPO) as the library of GPO's Public Documents Division. It includes copies of publications printed by GPO or by other federal agencies, excluding those publications which are security classified or printed for purely administrative and internal use. Publications relating to practically all record groups in the National Archives can be found in the collection. The period covered is 1790–1971. Although the most comprehensive set of federal publications in existence, it is not complete. Gaps occur most frequently for the period before 1895, the year that the office of Superintendent of Documents was established. The collection was transferred from GPO to the National Archives in 1972.

The National Archives and Records Service sponsors periodic conferences and symposia both in Washington and elsewhere in the country to acquaint researchers with its resources. Papers and proceedings of the major series of conferences are published.

Thousands upon thousands of visitors enter the rotunda of the National Archives through the year to see the great charters: the Declaration of Independence, the Constitution, and the Bill of Rights. The individual parchment pages are sealed in their own cases of glass and bronze which contain inert helium and measured amounts of water vapor to prevent deterioration. Light filters protect against fading. Every night the displayed documents are lowered into their vault 20 feet below the floor of the chamber. Only two pages of the Constitution—the first and the signature page—are displayed throughout the year. The other two pages, in their cases, remain in the vault. However, annually, on Constitution Day, September 17, the full Constitution is displayed in the rotunda in commemoration of the signing of the document on that date in 1787. Other exhibits drawn from the holdings of the National Archives are changed from time to time. Film festivals featuring documentaries from archival footage are regularly scheduled.

The archivist of the United States chairs the National Historical Publications and Records Commission, which is housed in the National Archives building and which encourages and helps support the publication of documentary sources important to the study of American history. The archivist also chairs the National Archives Trust Fund Board, the Administrative Committee of the *Federal Register*, and the National Archives Advisory Council. There have been five archivists of the United States: Robert D. W. Connor, 1934–1941; Solon J. Buck, 1941–1948; Wayne C. Grover, 1948–1965; Robert H. Bahmer, 1965–1968; and James B. Rhoads, 1968–.

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NATIONAL BIBLIOGRAPHY

National bibliography is a generic term for which definitions abound. There are two basic types of national bibliography, retrospective and current.

Retrospective national bibliographies issued in the past include numerous monuments of individual bibliographical scholarship, for example, the remarkable works of the Chilean, José Toribio Medina (*1*) and Roorbach's *Bibliotheca Americana* (*2*). Today, retrospective national bibliographies most commonly take

the form of published catalogs of national libraries, such as the British Museum's *General Catalogue of Printed Books* (3) and the French *Catalogue général des livres imprimés* (4).

In current usage the term most commonly refers to the periodic listing of publications issued within the boundaries of a single nation but may include publications on the subject of a particular nation or material written by the citizens of that nation, wherever published, and/or publications issued anywhere in the national language. Because the concept and practice vary so widely, definitions tend to be idealistic rather than descriptive:

> The ideal [current national] bibliography is conceived as a complete listing of all books, documents, pamphlets, serials, and other printed matter published within the bounds of a single country and within the time limits of the previous year or less (5).

Linder expands this definition to include all of the following (6):

1. Books and pamphlets published and on sale
2. Books and pamphlets issued but not on sale
3. Periodical and newspaper articles
4. Maps, globes, and atlases
5. Musical works
6. Audiovisual materials
7. Theses and academic publications
8. Government publications
9. Periodical publications and newspapers
10. Art reproductions, drawings, and prints

There are no currently published national bibliographies which combine all of these elements.

The term "national bibliography" is relatively new, appearing first in print in 1858 (7), but the earliest known bibliography based on national origins dates from 1548: John Bale's *Illustrium Majoris Brittanniae scriptorum hoc est Angliae, Cambriae ac Scotiae summarium*. Bale lists English writers in chronological order, with an index of Christian names at the front. The national origin is that of the authors, rather than of the publications. Bale's work might more accurately be described as a "bio-bibliography" than as a national bibliography.

The next important development was the publication, beginning in 1564, of the German Messkataloge, catalogs of publications offered for sale at the annual book fairs held first at Frankfurt and later also at Leipzig. Listings were predominately, but not exclusively, of German publications. The Frankfurt catalogs were issued annually through 1749 and the Leipzig catalogs from 1594 through 1860. The important principle established by the Messkataloge was their periodicity, a feature which was not successfully adopted elsewhere until the English "Term Catalogues" were initiated in London in 1668.

In the meantime, bibliographies based on national origins, either the place of

publication, or the birthplace of the writer, continued to proliferate. Malclès describes the *Catalogue of English Printed Books*, published by Andrew Maunsell in 1595, as the first list of a truly national type (*8*). Unlike his predecessors, Maunsell arranged his catalog by the surname of the author rather than the forename. He also must be credited with "a truly revolutionary innovation: in his book a real technique of book description is made for the first time," providing full and relatively accurate entries (*9*).

"National" bibliographies appeared in increasing numbers through the 17th and 18th centuries, but Besterman holds that "After 1600 . . . nothing of fundamental importance was added to the principles laid down in this first period" (*10*). As the publishing industry grew and expanded, so did the concept of current bibliographical control, impelled first by commercial motives and later by the burgeoning profession of librarianship. The growing interest in international bibliography which resulted in the formation of the Institut Internationale de Bibliographie in 1895 also gave impetus to involvement of official government agencies in a field largely dominated by book dealers and publishers. The first International Conference on Documentation noted that universal bibliographic control presupposes the existence of complete, accurate national bibliographies, and urged upon governments the importance of uniform legislation regarding legal deposit of publications.

Subsequent international conferences continued to support the idea of national bibliography, including the International Publishers Congress of 1899, the third and fourth International Conferences on Documentation in 1900 and 1908, and the World Congress of Libraries and Bibliography in 1929.

In November 1951 the United Nations Educational, Scientific and Cultural Organization (UNESCO) sponsored a Conference on the Improvement of Bibliographic Sources. The two working groups formed in the course of the conference recommended specific courses of action with respect to bibliographical services both national and international.

> It was the view of the Conference that practical development of bibliographical work should rest in the hands of national planning bodies. These national planning bodies should be created in each country, and in each case the nature of the body would be determined by national circumstances. The planning body might well be a governmental agency, possibly related to the national bibliographical centre, or it might be a Committee established by such voluntary organizations as the national associations of librarians and documentalists, or associations of the users of bibliographical services . . . (*11*).

In preparation for the conference, UNESCO contracted with the U.S. Library of Congress for preparation of a world bibliographical survey, which appeared in 1950 in two volumes (*12*). The recommendations of the conference led to a subsequent series of UNESCO bibliographical surveys of member states by Malclès, Collison, and most recently by Avicenne (*13*). The surveys emphasized and encouraged the formation of national bibliographical committees and working groups,

In 1973 the International Federation of Library Associations (IFLA) devoted its annual conference to problems related to Universal Bibliographic Control (UBC), defined by IFLA as "the systematic handling of bibliographical data from the time a book is printed anywhere in the world until its cataloging by libraries" (*14*). The numerous papers delivered were clearly in agreement that current national bibliographies must serve as the building blocks of UBC, the objectives of which have been described as twofold: to catalog each item only once, as near to the source as possible; and to make bibliographic information on all publications issued in all countries available in an internationally accepted form. The International Office for Universal Bibliographic Control, created by IFLA in 1974 to promote these objectives, has before it a Herculean task, for current national bibliographies differ widely with respect to four important factors; the issuing agency, scope, format, and frequency.

The issuing agency may be commercial or noncommercial. The former publish what is commonly described as "trade bibliographies" which may serve as the national bibliography in countries where no official list exists, for example, the American *Cumulative Book Index;* the two principal Dutch sources, *Brinkman's catalogue van boeken,* and the *Niewsblad voor de boekhandel;* or the *Boletin bibliográfico mexicano.* Few trade bibliographies serve as adequate national bibliographies with respect to either the variety of materials covered or the detailed cataloging, descriptive or subject, sought by the libraries which comprise a significant proportion of their clientele. Such lists are seldom, if ever, commercially viable and hence require subsidization.

National libraries are the primary source of current national bibliographies (Algeria, Australia, Belgium, etc.) but academic institutions are also represented (the Institute of Ethiopian Studies of Haile Selassie I University and the School of Librarianship, University College Dublin), as well as professional librarians' associations (the Costa Rican Asociación de Bibliotecarios). Often the responsible body is an official, or quasi-official, agency functioning within, or in conjunction with, the national library (the Bŭlgarski Bibliografski Institut).

Obligatory deposit is often considered the *sine qua non* of any successful national bibliography. The UNESCO Conference of 1950 (see above) urged governments

> to adopt a law securing the obligatory deposit, in the National Library or elsewhere, of at least one copy of every book and other publication published in the country. Otherwise . . . the preparation of national bibliographies will be rendered difficult (*15*).

The concept of obligatory deposit dates back to 1537 in France and is now found in many countries, but rarely functions as effectively as intended because of inadequate penalties for noncompliance. One of the best national bibliographies appears, however, without benefit of any legal deposit (*Das schweizer Buch*), as do a number of excellent trade bibliographies (*Cumulative Book Index* and the Dutch *Niewsblad voor de boekhandel*).

The scope of national bibliographies is often limited by political boundaries, i.e., the area effectively covered by obligatory deposit, by language, and by format. A number of lists compiled by national libraries reflect the acquisitions policies of those libraries, and include publications by national authors and/or publications about the country, wherever issued (Australia, Belgium, Canada, Switzerland, etc.). The *Bibliographie de la France* includes a selection of French-language publications from Switzerland and from the French *Communauté*. The two Germanies each include the publications of the other in their lists, as well as German-language publications issued abroad. The Czechoslovakian bibliography consists of two independently produced lists, one covering the Czech regions, the other the Slovak regions.

Types of material listed vary widely. All national bibliographies include monographs and new periodicals, but some exclude new editions of monographs (*Anuario bibliográfico colombiano* and *Bŭlgarski knigopis*) and many list periodicals in a separate sequence or supplement (*Bibliografía española* and *Knizhnaia letopis'*). Few list ephemera but most include government publications, like periodicals, in a separate sequence or supplement. Theses, maps, and printed music are often included, but films, patents, and recorded music rarely. Avicenne provides a chart showing which of nine categories of publications are included in the national bibliographies issued by members of UNESCO (*16*).

The arrangement of the bibliography ordinarily follows one of two basic patterns: (1) subject arrangement or (2) groupings by format or language. The classified subject list is by far the most common of these and a modified Dewey Decimal Classification is the arrangement generally preferred (e.g., the *British National Bibliography*, the Brazilian *Boletim bibliográfico da Biblioteca Nacional*, and the *South African National Bibliography*). The *Bibliographie de Belgique* arranges its entries according to the Universal Decimal Classification. *Das schweizer Buch* arranges its contents under 28 subject headings, and the *Österreichische Bibliographie* under 13 headings, each group arranged alphabetically by author.

Canadiana is an example of a list divided primarily by format: Part 1 arranges "publications of Canadian origin and interest" by the Dewey Decimal Classification; Part 2 lists theses on microform; Part 3, serials; Part 4, pamphlet file material; Part 5, sound recordings; Part 6, films, filmstrips, and videotapes; Part 7, publications of the government of Canada; Part 8, publications of the provincial governments of Canada.

Whatever the arrangement—by subject, by format, or a combination of the two—each item is customarily numbered. An alphabetical index of authors in each issue or volume locates the item for a reader by referring to the citation number.

Frequency of issue is primarily a function of the volume of publishing to be covered and funds available to the issuing agency. In order to serve successfully as a selection tool, the bibliography must appear frequently and on schedule, for example, the weekly *Knizhnaia letopis'* and the fortnightly *Bŭlgarski knigopis*. Unless the individual issues cumulate periodically, their usefulness decreases signifi-

cantly, but the *British National Bibliography* pattern of weekly issues cumulating quarterly, annually, and quinquenially is too expensive a schedule for most countries to follow. A much smaller volume of national publishing would render such a schedule completely impractical for nations such as Ghana and Colombia, each of which issues only an annual volume. Lists like the *Boletín bibliográfico argentino,* which appear 10 or more years after the period covered, obviously serve only as an historical record.

In recent years an old bibliographic factor has come into new prominence— the descriptive elements of the entry itself. In 1965 a study by the Library of Congress (LC) revealed that the bibliographic descriptions found in most current European national bibliographies differed insignificantly from the type and arrangement of information employed on the LC printed catalog cards. This led to the utilization, virtually without change, of cataloging copy prepared by other national bibliographical centers, on LC printed cards, which are themselves used internationally. In the late 1960s the generation of machine-readable cataloging data led to further standardization, strongly promoted by the International Federation of Library Associations. An International Standard Bibliographic Description was officially adopted by IFLA in 1971, with the object of providing a standard for the descriptive portion of bibliographic entries prepared by the national bibliographical and cataloging agencies of all countries. The resulting entries are intended to meet three requirements:

> first, that records produced in one country or by the users of one language can be easily understood in other countries and by the users of other languages; secondly, that the records produced in each country can be integrated into files or lists of various kinds containing also records from other countries; and thirdly, that records in written or printed form can be converted into machine readable form with the minimum of editing (*17*).

The third factor was perhaps the most significant for those libraries producing, or expecting to produce, machine-readable cataloging copy for national bibliographic purposes. By 1974 this included Germany, Japan, Spain, the United Kingdom, and the United States. None of these countries, however, had abandoned a published bibliography in favor of machine-readable copy, nor showed any inclination to do so in the foreseeable future. Computers, at most, are used in the production of printed copy and/or supplementary data, as in the case of the MARC tapes distributed by the Library of Congress.

The United States, despite its prominent international role in publishing and librarianship, has no current national bibliography. There are numerous sources which, considered together, offer reasonably full bibliographical control, but they also overlap in many areas and yet fall short of complete coverage.

Two federal government agencies, the U.S. Superintendent of Documents and the Library of Congress, are responsible for documenting the major portion of the American bibliographical record. The Superintendent of Documents issues the

Monthly Catalog of United States Government Publications, which attempts un- · successfully to list all U.S. government publications wherever printed and by what- · ever agency:

> Despite strenuous efforts made by its editors, there is no doubt that the *Monthly Catalog* is incomplete because the compilers do not always receive copies from the publishing agencies and because the issuance and distribution of these publications are scattered among so many minor administrative units in the executive agencies (*18*).

This is partially remedied by the Library of Congress annual *Non-GPO Imprints;* (see below).

The Library of Congress produces an impressive array of catalogs and lists which,, taken in their entirety, approximate a national bibliography. The most significantt are as follows:

1. *Catalog of Copyright Entries.* Issued in 14 parts covering Books and Pamphlets, Periodicals, Dramas and Works Prepared for Oral Delivery, Music, Maps and Atlases, Works of Art, Prints and Labels, Motion Pictures, and Sound Recordings. All appear semiannually except for Periodicals and Prints and Labels, which appear annually. The *Catalog* fails to meet the requirements of a national bibliography because of a significant volume of materials (e.g., all government documents) which are not copyrighted. Plans to automate the *Catalog* should correct another major deficiency, the long delay between the appearance of publications and their inclusion in the *Catalog.*
2. *National Union Catalog (NUC).* Issued monthly with quarterly, annual, and quinquennial cumulations. *NUC* is an alphabetical author list "representing Library of Congress printed cards and titles reported by other American libraries." U.S. imprints constitute less than 25% of the items listed but a significant number of government documents—federal, state, and local—are listed, as are other noncopyright materials. Supplements include *Motion Pictures and Filmstrips* (quarterly with annual and quinquennial cumulations) and *Music and Phonorecords* (semiannual with annual and quinquennial cumulations). Both supplements offer main entry, added entry, and subject approaches.
3. *Library of Congress Catalog: Books: Subjects.* Unlike *NUC, Books: Subjects* lists, according to LC subject headings, only works represented by LC printed cards. Appears quarterly with annual and quinquennial cumulations.
4. *Monthly Checklist of State Publications.* Lists official publications of the U.S. states, territories, and insular possessions received by the LC. Cumulates annually with subject and issuing body index.
5. *Non-GPO Imprints.* A selective checklist of federal government documents received by LC which fall outside the scope of the *Monthly Catalog,* but may be of interest to research libraries. Issued annually.

Two trade bibliographies record most of the nation's commercial publishing. *Weekly Record* (issued prior to September 1974 as a section of *Publishers' Weekly*) provides Library of Congress cataloging data for most entries and cumulates in the monthly *American Book Publishing Record.* It excludes

federal and other government publications; subscription books, dissertations; new printings (as distinct from reprints, reissues, and revised or new editions); . . . pamphlets under 49 pages; and specialized publications of a transitory nature or intended as advertising.

The *Cumulative Book Index* (*CBI*) describes itself as an "international bibliography of books published in the English language," although it excludes government documents, most pamphlets, inexpensive paperbound books, ephemera, maps, music scores, editions limited to 500 (or less) copies, and other special materials. Author, title, and subject entries are arranged in one alphabetical sequence in monthly issues which cumulate quarterly and annually.

Greer, in his study of the U.S. national book bibliography, concluded that a combination of bibliographies is necessary for all available information on new publications. His data revealed that the *National Union Catalog* was the most complete current general book bibliography. The *Cumulative Book Index* was second, closely followed by the combination of *Publishers' Weekly* (*PW*, now *Weekly Record*) with *Book Publishing Record* (*BPR*). "The combination of *CBI* and *PW–BPR* contained about 95% of the relevant items in the *NUC*. The *CBI–NUC* combination listed more 1961 American imprints than any other—about 97%" (*19*).

The following list of national bibliographies provides the title, the issuing agency (or publisher), date of initial coverage, and frequency, insofar as these elements could be determined at the time of compilation. In the case of the Netherlands, the trade bibliography which serves the function of an official bibliography is listed. In all cases the title and issuing agency are shown in the language in which they appear in the publication. Languages in non-Roman characters have been transliterated.

NATIONAL BIBLIOGRAPHIES

Albania: *Bibliographia Kombëtare e Republikës Popullore të Shqipërisë: Libri Shqip*, Botim i Bibliotekës Kombëtare, 1958– (quarterly).

Algeria: *Bibliographie de l'Algérie*, Bibliothèque Nationale, 1964– (semiannual).

Australia: *Australian National Bibliography*, National Library of Australia, 1961– (weekly/ monthly/annual).

Austria: *Österreichische Bibliographie*, Österreichischen Nationalbibliothek, 1946– (semimonthly).

Belgium: *Bibliographie de Belgique*, Bibliothèque Royale, 1875– (monthly).

Botswana: *The National Bibliography of Botswana*, Botswana National Library Service, 1969–.

Brazil: *Boletim bibliográfico da Biblioteca Nacional*, Biblioteca Nacional, 1918– (quarterly).

Bulgaria: *Bŭlgarski knigopis*, Bŭlgarski Bibliografski Institut Elin Pelin, 1897– (semimonthly).

Canada: *Canadiana; Publications of Canadian Interest Noted by the National Library*, National Library, 1950– (monthly/annual).

China, National Republic of: *Monthly List of Chinese Books*, National Central Library, Bibliographical Centre (monthly).

China, People's Republic of: *Ch'üan kuo hsin shu mu*, Pei-ching t'u shu kuan pan pen shu k'u, 1972– (bimonthly).

Colombia: *Anuario bibliográfico colombiano*, Instituto Caro y Cuervo, 1951– (annual).

Costa Rica: *Anuario bibliográfico costarricense*, Associación de Bibliotecarios, 1958– (annual).

Cuba: *Bibliografia cubana*, Biblioteca Nacional José Marti, 1937– (annual).

Czechoslovakia: *Bibliograficky katalog CSSR*, (1) *Česke kniky*, Státní Knihovna ČSR (weekly); (2) *Slovenská národná bibliografia: Knihy*, Matica Slovenska (monthly).

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FRANK M. MCGOWAN

NATIONAL BOOK COMMITTEE*

The National Book Committee is a nonprofit, membership organization chartered in New York State in 1954. The membership on its national board consists of approximately 300 men and women active in business, industry, and the academic professions. Membership is by invitation and terms are indefinite. From the national board, an executive committee of 25 is elected. The four officers are: chairman, two vice-chairmen, and secretary-treasurer. The executive committee meets bimonthly from September through May to establish fiscal and program policies.

The purposes of the National Book Committee are to foster the wider distribution and wiser use of books, to promote greater utilization and support of libraries, to encourage the development of life-long reading, to improve access to books, and to preserve the freedom to read. An important part of the original rationale of the Book Committee was the desirability of establishing a citizen-oriented voice in the world of books: a structure which included, but was not limited to, the professional concerns of librarians and educators or the commercial interests of authors, publishers, and booksellers.

To reach its objectives, the Book Committee administers literary awards, sponsors National Library Week, and conducts various conferences and workshops on book-related topics and issues. Books published on behalf of the Book Committee, on a nonprofit basis, include: *A Parent's Guide to Children's Reading,* by Nancy Larrick (Doubleday/Pocket Books); *Books and the Teen-age Reader,* by G. Robert Carlson (Harper/Bantam); and *Getting People to Read,* by Carl B. Smith and Leo Fay (Delacorte/Delta).

The most visible continuing activities of the Book Committee are the annual National Book Awards and the National Medal for Literature, discussed in detail below.

National Book Awards

Encouraging, acknowledging, and rewarding independent and creative writers have been the purposes of the National Book Awards since they were first presented in 1950.

The awards—originally three and now ten—are conferred annually for books which panels of judges regard as the most distinguished works written or translated by American citizens and published in the preceding calendar year.

For the first 10 years, through 1959, the National Book Awards were conducted by a volunteer committee drawn from within the publishing industry. Committee chairmen during that decade included William Cole, Louise Thomas, Eleanor Kask Friede, and the late Jay Tower. Since 1960, the awards have been administered by the National Book Committee, Inc.

The $1,000 awards are contributed by the Association of American Publishers, the American Booksellers Association, the Children's Book Council, and the Na-

* Liquidated in 1974.

tional Association of College Stores. Earlier donors also included the Association of American University Presses, the Book Manufacturer's Institute, and the National Translation Center.

Overall responsibility for the administration of the awards is vested in the National Book Committee's Executive Committee, assisted by an Awards Policy Committee, whose members include authors, critics, book review editors, and representatives of the donor associations. The Awards Policy Committee, and its predecessor bodies, have been chaired by Roger L. Stevens, chairman of the Board of Trustees for the John F. Kennedy Center for the Performing Arts and chairman of the National Book Committee; Mason W. Gross, president-emeritus of Rutgers, the State University of New Jersey, and a former chairman of the National Book Committee; Gilbert W. Chapman, president of the Board of Trustees of the New York Public Library and founding chairman of the National Book Committee. and Newton N. Minow, former chairman of the Federal Communications Commission.

From 1950 through 1963, awards were presented in the three categories of fiction, nonfiction, and poetry. Nonfiction was subsequently subdivided into arts and letters, history and biography, science, and philosophy and religion (in 1964). In 1971 history and biography were separated, contemporary affairs added, and the sciences detached from philosophy and religion. Translations were added in 1966, and children's books in 1968.

While award categories and the number of juries and jurors have varied somewhat since 1950, the judicial process has remained essentially constant. There are now panels of three judges each for all of the categories except arts and letters, fiction, and translation, for which there are juries of five persons.

Members of each panel are nominated for their literary qualifications as well as their expertise in a particular field or subject. Authors are preferred, since writers highly value recognition by their peers (Alfred Kazin once said, "There's nothing sweeter for a writer than to be praised by another writer"). Judges may not be connected with any of the donor organizations; nor may they serve on a jury in an award category for which one of their own books may be eligible. They agree to devote the time necessary to complete the extensive reading involved (with a modest honorarium), and to attend at least two meetings to nominate and select the award-winning books.

Final composition of each panel of judges is determined by vote of the members of the Awards Policy Committee.

The Awards Policy Committee respects and protects the privacy and freedom of the juries, whose nominations and final selections are not subject to review. The names of judges are, however, made public as soon as the composition of all the panels has been completed, usually early in the fall preceding the announcement of the awards.

Recognizing that all awards are inherently fallible and inexorably controversial, no matter how conscientiously and impartially administered, the National Book Committee continues to rely on the experience, taste, integrity, and complete autonomy of the juries to make the best possible choices. The long roster of jurors,

including many award winners, is itself a literary consistory of men and women who have made eminent contributions to 20th-century American literature.

Judges have always been free to dissent from the majority's choice, and a few have roundly denounced, in public, their colleagues' decisions.

An analysis of the winning books over the years justifies the committee's faith in the jury system. While some notable books were undeniably overlooked, the record as a whole is a distinguished one, and a score of authors were honored some years before their work earned the commercial success it now enjoys.

In the first 2 years of the awards, nominees were not made public; since then, announcements of the finalists being considered by the judges have generated additional public recognition for a sizable list of worthy books. Now, in fact, serendipitous economic benefits often accrue to these candidates.

National Medal for Literature

The National Book Committee also sponsors the National Medal for Literature, an annual $10,000 award endowed by the Guinzburg Fund in memory of the late Harold K. Guinzburg, founder of The Viking Press and one of the organizers of the Book Committee.

The award is conferred on a living American writer for his total contribution to American letters; it was presented first, in 1965, to Thornton Wilder in a ceremony at the White House. Subsequent winners have been Edmund Wilson (1966), W. H. Auden (1967), Marianne Moore (1968), Conrad Aiken (1969), Robert Penn Warren (1970), E. B. White (1971), Lewis Mumford (1972), and Vladimir Nabokov (1973).

A nominating committee of distinguished writers and critics selects the candidates, who are voted upon by members of the National Book Committee, the Awards Policy Committee, and all past judges of the National Book Awards.

National Library Week Program

Sponsored by the National Book Committee in cooperation with the American Library Association since 1958, National Library Week (NLW) has mobilized the voluntary efforts of thousands of persons, scores of public and private agencies, and the mass media in focusing attention on the nation's essential library resources— and on the critical shortages and gaps in library services. Under NLW aegis, public awareness of these assets and needs has been heightened; and libraries have been stimulated to reach out with new kinds of services to the illiterate, educationally handicapped, and culturally isolated in urban and rural communities.

JOHN C. FRANTZ

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

The National Commission on Libraries and Information Science (NCLIS) is a permanent and independent agency within the Executive Branch of the United States government. Established by Congress in 1970, the commission is charged with the primary responsibility for developing or recommending overall plans for the provision of library and information services adequate to meet the needs of the people of the United States. The commission will recommend the plans it develops to Congress, the President, and state and local governments. The commission is authorized to conduct necessary studies, surveys, or analyses. It may sponsor and promote research and development activities and conduct hearings to further its objectives. The commission is required to report annually on its activities. A significant aspect of the charge given to the commission is to place the library and information problem in a national framework rather than in one that is local or topical.

The work of the commission is directly related to major national goals. National leaders have recognized that information provided at the right time and in the right amount and format can improve the ability of an individual, an organization, a business, or a governmental agency to make an informed decision, produce a better product, or live a richer life. Better information services lead to a better-informed citizenry—one that can cope with problems in the areas of neighborhood and personal security, adequate food and fuel, improved human relationships between persons of differing backgrounds, and world peace. The commission is to seek diligently for those paths, old or new, that will make information equally available to all.

Fifteen commission members are authorized. Fourteen are appointed by the president with the advice and consent of the Senate; the 15th is the librarian of Congress, who serves ex officio. President Nixon made the first appointments to the commission in May 1971. The law requires that five members must have a professional background in libraries or information science; the others must have special competence or interest in the field. One member is a specialist in the technological aspects of library and information services. Three of the members appointed in 1971 were asked to serve for 5 years and the others for shorter periods of 4, 3, 2, and 1 years. This provision assures continuity of membership as subsequent 5-year appointments are made. Dr. Frederick H. Burkhardt, president of the American Council of Learned Societies, was appointed by President Nixon as the first Chairman of the NCLIS. His current appointment continues until 1976.

The commission has congressional authorization to expend $750,000 annually. Headquarters for the commission are in Washington, D.C.

Working Philosophy of the Commission

The basic working philosophy of the NCLIS is user-oriented: the user of information must benefit from all commission work. The phrase "user of information"

should be interpreted in the broadest sense—not limited to present users of libraries or of other existing information services. Planning relevant information services for users who have no service that matches their current information-seeking habits may indeed be one of the greatest challenges to the commission. Within this user-oriented context, the commission's major concern has been the setting of goals and priorities for action. A review of the literature dealing with the wide variety of problems experienced by libraries and information systems produced a substantial array of important issues. Some problems seem to affect only one type of library; others are common to every type. The activities of the information producer, the author, and the publisher have a great bearing on what can be done effectively by the indexer or the librarian. With help needed at every level, the commission set two important and closely related goals.

Major Goals

The first goal is to meet the needs of all users of information and all libraries. The second is to achieve equal access to libraries and information services for all. These goals guide the commission in each of its actions. These first goals have been stated in widely disseminated commission resolutions:

> Resolved, that the National Commission on Libraries and Information Science should give first priority in its planning effort to providing new and improved services that will be helpful to all libraries in the country and their users, at every level of society.

> Resolved, that the National Commission on Libraries and Information Science believes that national equality of access to information is as important as equality in education.

The first resolution expresses the commitment of the commission to balance its activities, not favoring in its studies or planning the development of one type of library or information system over another unless all users are thereby aided. The resolution also implies that the commission must understand users' information needs in a better way than these needs have been understood previously.

The NCLIS considers the second resolution fundamental. While the ideal of equal service for all is unanimously accepted, it is a difficult goal—one that may take a long time to achieve. Geographical dispersion of the population is the most obvious of several obstacles. The improved and cheaper communication techniques needed to surmount these obstacles are not in the immediate offing. Still the idea of equal access is a useful guiding ideal for the commission's work.

Studies and Hearings

Early in its deliberations, the National Commission on Libraries and Information Science recognized its need to learn more about library conditions throughout the

nation. Regional hearings were planned and announced as timely opportunities for people to place before the NCLIS their views on library and information science services. The hearings also gave the commission an opportunity to present its own recommendations and plans before the people. Thus the hearings foster an understanding of the commission's role and enable the commission's planning effort to derive the regular benefit of the thoughtful critique of concerned witnesses. Each hearing has had its distinct character, dependent on the nature of the region and the regional library resources, on the progress of commission activities, and on the state of federal funding for library activities.

In preparation for the hearings, each of the invitees was sent a copy of the National Commission on Libraries and Information Science's information relating to the commission's activity. The role NCLIS could play in proposing and coordinating library and information science programs on a national scale received much attention in responsive testimony. The commission is expected to provide leadership in national planning, to set priorities among possible courses of action, and to coordinate its efforts with state agencies and other national bodies for common purposes. The response to the commission's request for testimony reveals a corps of highly motivated persons who are eager to listen, contribute, and respond to commission leadership. No other group has attempted to fill the role of national information service planner, though some have had a major influence on library progress.

NCLIS is seen as a body of national influence beyond the authority delegated to it. Witnesses look to the commission for the leadership to provide quality library and information service and equal access to it.

Through its hearings and its contractual studies, the commission has built its foundation for the first elements of its national program for libraries and information services. The information gathered from the studies and the hearings is grouped here under the headings selected by the commission as fundamental to its work:

1. The information needs, desires, and demands of information users.
2. The adequacies and deficiencies of current library and information services.
3. The problems of funding all types of information service.
4. The introduction, testing, and use of new technology for the storage, retrieval, copying, transmission, and preservation of recorded information, including audiovisual materials.
5. The selection, training, assignment, and continuing education of persons employed in the information industry.
6. The development of intrastate and interstate networks for information services, including collection development, bibliographic processing and access, question-answering reference work, and access to test and data.

INFORMATION NEEDS, DESIRES, AND DEMANDS OF INFORMATION USERS

Since their philosophy of operation is user-oriented, the NCLIS requires a deep understanding of the information user. An initial study document (*1*) written

for the commission by Ruth Patrick and Michael Cooper verified the paucity of dependable information in this area. To fulfill its requirement, the commission began its own program of studies on the information needs of users. Under a commission contract, Mr. Charles Bourne, director of the Institute of Library Research at the University of California (Berkeley), agreed to provide some guidance to the types of users whose distinct information needs would require consideration in terms of library services and information systems (2).

The objectives of the work were: (1) to identify the principal population groups whose information needs differ in significant ways from those of the general population and to define those differences; and (2) to formulate an array of possible specifications for the post-1975 library services that will meet the needs that have been defined. Work commenced with a broad survey, search, and study of the relevant published reports on various user types. Consideration of the methodologies applicable to the development of future library and information services followed.

Written studies of the 1960s confirmed decades-old profiles that in the general population the typical *public* library user is young, female, single, well educated, white, and middle-class.

However, a notable difference between the findings of the 1968 National Advisory Commission on Libraries and the testimony at the NCLIS hearings is the diversity of individual needs laid before this new commission. No longer do libraries serve only a small, homogeneous population, as was reported to the Advisory Commission. The poor, the isolated, the institutionalized, the foreign-speaking, the children in nursery schools and the aged in nursing homes, and the researcher in his laboratory are beginning to be served from new information resources.

The needs of scholars, scientists, and businessmen, among others, are somewhat different from those of most urban citizens. Where the latter's needs are for general information and individualized service, the needs of the specialist are more particularized. They want a specific publication located and obtained quickly.

The report of the Institute of Library Research identified several groups whose special needs require attention. Among them are:

> American Indians
> Blacks
> Blind and partially sighted
> Children and young adults
> Deaf
> Economically and socially disadvantaged
> Foreign-language-speaking (and reading) people
> Functionally (or totally) illiterate
> Mentally retarded
> Mexican-Americans
> Migrant workers
> Nonprofessionals
> Older people
> Physically handicapped and shut-ins

Prisoners
Professionals with job-related information needs
Rural people
Students
Women

These subgroups were studied in terms of single variables: age, economic level, or housing location. Each group was found to have information needs different from the needs of the general population. No effort was made to identify subgroups in terms of multivariable descriptions such as the term "disadvantaged" might imply.

Discussions and interviews with concerned persons resulted in the formulation of the following observations:

1. It would be worthwhile to continue the effort to upgrade many of the current national standards—expanding their scope and incorporating the latest thinking regarding the general functions and objectives of public information services.
2. It is not possible now to develop a complete set of meaningful objectives, standards, or specification statements. Further study is required.
3. It is difficult to formulate specification statements that are both general enough to cover most situations and specific enough to be a basis for design or evaluation efforts. It does seem to be worth the effort to continue the attempt to develop such specifications at both the local and national levels.
4. The National Commission on Libraries and Information Science is the appropriate organization to lead this national system-planning effort.

Balancing services to satisfy needs is very difficult. The problem is faced in every library; it is particularly poignant in the venerable libraries of major cities. These libraries, whose resources are called upon to answer the needs of expanding citizen subgroups (including the business and research needs of industry and scholarship) and whose collections are sought for rare or unique items by people across the nation, have become nationally important resources that receive only local support. Likewise, university and certain special libraries are called upon to serve the general public as well as their own clientele, without supplementary compensation.

The most often mentioned user need is that for "survival" information of all kinds. Respondents want libraries to be able to inform citizens of the laws and codes under which they live (including proposed changes to laws), the requirements and procedures pertaining to social services, the names and programs of candidates for office, governmental reports and citizen group findings, and information on charitable institutions and social organizations. They want better information on courses of study offered in local schools and on scholarships available to local students.

Information and Society

The information needs of the people of the United States will continue to be influenced by social and economic trends, as well as by changes in the technology that can be economically applied to information service. These changes, particularly

in the next 5 to 10 years, will be of importance to the work of the commission. A basis for prediction was sought from Dr. Edwin B. Parker of the Stanford University Institute for Communications Research. Dr. Parker was asked to examine the trends in economics, social behavior, and technology and to extrapolate from those trends the types of information service that will be needed in the next decade. The time frame was selected to be close enough to the present for some projections and predictions to be based on more than guesswork, yet distant enough to allow time for planning and implementation.

Dr. Parker deals with information as a commodity whose importance rivals that of matter and energy. He notes that the effective conversion of matter into energy (or vice versa) to meet human needs depends upon the availability of information on how to accomplish the task. Investment, therefore, in the improved production and distribution of information (a nondepleting commodity) may be the only way to make the best use of the depleting commodities whose consumption is equated with the quality of life in many areas of human experience. But the level of the investment in the distribution of knowledge, Dr. Parker insists, must bear a favorable current and future relationship to the return on that investment. This is true for education, for information services, and for communication services. It is to this point that Dr. Parker addresses his paper as he predicts changes in economics, social behavior, and technology.

Dr. Parker predicts a growing gross national product whose components are undergoing rapid change—one that increases the significance of information and education relative to other types of productivity. He ratifies his expectation that the dominant trend in society is away from hard goods production and toward information and education "production" and distribution, presenting statistics on dollar volume and on the labor force employed in various areas over a time span of the last quarter century. He reaches five conclusions regarding the kinds of information service that will be required.

1. Expanded audio and video services should be provided in response to the general shift toward greater use of such media that will occur during the rest of this decade.

2. Greater emphasis on information for the "information-poor" will be necessary to counterbalance partially the likely widening of the gap between the "information-rich" and the "information-poor" that will result from increased commercial development and exploitation of information technology (including pay television).

3. Switching centers and referral services should be developed so that libraries can come closer to meeting the widening diversity of information needs, even though it may be uneconomical to provide a full range of service in each local library.

4. Consideration should be given to improving access for each citizen to public information about government services and government decision making at all levels. Minutes and supporting documents of all local government boards and committees could be made accessible through local libraries, for example. Within a few years, a national network of federal government information could be made available to local libraries via computer time-sharing and infor-

mation retrieval techniques, just as medical references are made available to the medical libraries by the National Library of Medicine's MEDLINE system. Computerized congressional information systems now being developed could be made nationally accessible by the Library of Congress.

5. National service to local libraries (e.g., on-line computerized searches of the Library of Congress MARC files) could be provided (analogous to MEDLINE) to make national bibliographic information readily accessible throughout the country.

The Denver Conference on Users' Needs

Although the observations of Patrick, Bourne, Parker, and Cooper were helpful, they were far from the definitive conclusions that the NCLIS requires. The reports, taken together, led directly toward the commission's next steps in the study of the information needs. The remaining requirement was for practical knowledge of the information needs of groups whose requirements for information have been neither understood nor fulfilled.

To address this concern, a small, invitational working conference was held in Denver, Colorado, in May 1973. The types of user groups represented were:

Aged
Agricultural workers
Biomedical workers
Businessmen and women
Children
Creative and performing artists
Culturally isolated
Economically and socially deprived
Geographically remote
Homemakers and parents
Institutionalized
Labor
Mentally and physically handicapped
Scientists and technologists
Social service workers
Youth and young adults

The participants were asked to define the characteristics of their group, to indicate why their group should receive information services, to define the needs of their group for library and information service, to assess the adequacies and deficiencies of current library and information services, and to indicate some strategy for fulfilling the needs. The conferees finally converged on expressing information needs in a framework that included:

The content of information.
The forms or format in which information is delivered.
The time frame in which information must be delivered if it is to meet the need.

The user requires content only when the content can be assimilated and when it arrives during the period of need. Content in an ideal format and delivered on a timely basis to one group of users in an emergency situation may be invaluable, while the same information in the same format may be of no use to others in a different situation. Information needs eluded precise description and definition.

The participants could not define priorities by the names of the clienteles to be served and, instead, defined some general principles that would require continued consideration. The first criterion was to determine whether a service or system helps to equalize the needs of various user groups and provides service to those who have previously had poor service or none at all. A service would be acceptable if it provided information service to an unserved subgroup within a large group. The second criterion has to do with library and information services that address major social priorities within the nation. An example is the polarization of society into populations with divergent sets of values on the quality of life within society. An information service that touches on social problems such as these should be given priority, the participants said. The third criterion favored selective, individualized, personalized services as opposed to mass services rendered to large groups. While this seems to run counter to the need for cost consciousness in the development of information systems and services, it was nonetheless felt to be of importance. A fourth criterion was that any new information service should help to articulate the existing state, local, federal, and regional services provided in the past to varying constituencies. In outlining this criterion, the participants suggested that access to "life information" is equally important to all and that information services should give each citizen an equal opportunity for gaining access to knowledge that will preserve and improve his life. Finally, priority should be given to network development rather than to individual component building.

As the discussion of needs, priorities, and future changes ended, the participants were asked to formulate specific recommendations on the information needs to individuals and groups for future action. The conference showed that many people are living without any information service in a world that demands an informed citizenry for progress. It is clear that very little has been done in the way of systematic analysis of the needs of particular subgroups of our population.

THE ADEQUACIES AND DEFICIENCIES OF CURRENT LIBRARIES AND INFORMATION SERVICES

New standards are necessary before a reliable assessment can be made of the adequacies and deficiencies of present information services. Because present standards are based on quantitative measures, witnesses at the hearings urged the commission to establish new ones by which the quality of information services can be judged. New standards for information services should enable benefits to be evaluated in terms of costs.

Rural areas, elementary schools, and small colleges—especially Black colleges—are the most noticeable locales of deficient service. The low tax base and isolated

population of rural areas preclude the building of adequate collections. A strong sense of individualism combined with the low value placed on good information service has, in many places, prevented the regional cooperation that might have provided adequate service. Demographic studies show that today's rural people will be tomorrow's urban patrons. Future demands are being created now. Similarly, the reading habits molded in childhood are those of the adult. The number of school libraries is growing, but many are inadequate in terms of staff as well as materials. Small colleges are joining in consortia among themselves and in larger cooperative programs in order to provide their students and faculties access to the materials they need but cannot afford. Community colleges are enrolling students before adequate library resources can be gathered to support their studies.

Buildings and facilities themselves may restrict service. Outgrown buildings, architecturally unsuited to library functions, need to be replaced. Barriers that prevent physically handicapped persons from using the buildings must be removed. The lack of lighting (inside and out), parking facilities, and public transportation can also be barriers to use. Meeting rooms, activity centers, and cultural programs enhance possibilities for service. Moreover, the library must be open when people want to use it. While public libraries are extending their hours, school libraries lock their doors when school is not in session. Some library loan services are seen as too slow by users even when they are considered to be fast by librarians.

Bibliographic control of periodicals, documents, and microforms is inadequate. Much of the tremendous growth in publication is in these forms. Plans are needed to coordinate acquisition, to share in processing costs, and to permit the user to have access to the needed materials wherever they may be. Present indexing and abstracting services are seen as prohibitively costly for many libraries trying to provide research resources. Costs continue to rise though service is slower and coverage less adequate. Several services index the same journals for different clienteles, yet there are overall gaps in coverage.

A corollary to this problem lies in the physical preservation of present resources. Deterioration resulting from acid content in the paper used in library publications is endangering future use. Decisions must be made on what is to be preserved and where it is to be stored, as well as the method to be employed for preservation.

Except in times of crisis, public information campaigns are too expensive for most libraries. Television and radio are the most effective message media and the most expensive. Both make time available to public interest organizations, but requests are multitudinous and the time available relatively short. Pamphlets, posters, and news releases remain the best that media libraries can afford. Perhaps the most effective long-term public relations are accomplished by the participation of librarians and trustees in the activities of the community they serve. Services become known and relationships established as library staff are seen and accepted by the community. Promotion of the library to the public it serves may be a perennial area of deficiency.

Library of Congress

A NCLIS committee was established to examine the specific adequacies and deficiencies of the services of the Library of Congress (LC). The Library of Congress is unique in its age, size, scope, and multiplicity of services. The development of a national program of information services must first be based on the information user and second on the central role of the Library of Congress. The Library of Congress is, without challenge, the most important single center in a national array of libraries and information centers. The committee devoted many days to a study of the activities of the Library of Congress. Mindful of the fact that congressional committees are charged with overseeing management policy, operating methods, and efficiency evaluation of the Library of Congress, the commission emphasized the "products" of the LC from the point of view of the national interests that are the commission's concern. National benefits, in terms of cost effectiveness, were a goal of the NCLIS committee in making the following recommendations:

1. Expansion of the lending and lending-management function of the LC to that of a national lending library of final resort: To fulfill this requirement for back-stopping the other significant resources in the nation, and to do so without infringing on the need to protect its collections for future use, will require extended new arrangements—such as the purchase of some materials for loan and the use of microforms to produce simultaneously a preservation copy and a print copy for loan. New communications and improved text delivery techniques will be required.

2. Expansion and fulfillment of coverage of the National Program for Acquisitions and Cataloging (NPAC): The commission believes that the Library of Congress should seek to acquire, catalog, and process for current and future use approximately 85 to 90% of the world output. At this level of achievement, it is conservatively estimated that there would be a national saving of at least $66 million for research libraries alone, as well as additional significant national benefits.

3. Expansion and distribution of machine-readable cataloging to include substantially all languages of current monographic, serial, and other significant library and information materials being acquired by the Library of Congress: This project is essential for the effective operation of the bibliographic apparatus of the Library of Congress and other research libraries and information agencies. The task of maintaining bibliographic control of the increasing amount of significant library and information materials that is acquired by the Library of Congress is best accomplished using automated methods.

4. Distribution of bibliographic data through on-line communication: When acquisition and cataloging of most of the significant publications of the world (including serials) has become routine, the potential of a complete, machine-readable data base can be fulfilled with a central organization to speed the products of these services to the user through his library and his information service network.

5. Further development of an expanded General Reference Program to support

the national system for bibliographic service: This would include an expanded, rapid-response referral service to sources of information other than libraries and information centers.

6. A comprehensive National Serials Service to integrate and expand the present serials activities of the LC and to provide an organized set of serial services to the nation: National efforts can substantially benefit all libraries, make their work with serials more effective and less costly, and improve the accessibility of serial literature to users.

7. Improved access to state and local publications should be developed by the Library of Congress working with state and local agencies to standardize cataloging and other techniques of organization. The Library of Congress is the logical agency to assist in the local development of policies and programs that will make state and local governmental publications of greater benefit to various governmental bodies of the nation and to the people served by those governments.

The recommendations set forth are those that the commission believes will contribute most to the further development of information services adequate to meet the needs of the people of the nation.

Bibliographic and Resource Centers

Amid the many problems of the user in gaining access to the information he needs, there are three major questions. Has the information wanted been discovered and recorded in a known language and useful form? How has the information been identified and where is it? Can it be obtained while it is still useful? The more difficult it is to answer these questions, the more likely it is that a research library will be called upon to assist in the search.

Research libraries are important because they can help users whose information needs require uncommon collections or unusual facilities. They can, in concert, provide access to the broadest array of man's recorded progress. Fortunately, research libraries have freely shared their materials—through interlibrary loan—with increasing numbers of scholars. As the requests have risen, those providing the loans have been forced to consider the merits of continuing to permit access beyond the local clientele. Problems of cost, wear on scarce items, and of loss are important. More users and more use have inflicted a severe toll for the user, too. He is more frequently disappointed that the item he needs is "out to another user." Since guaranteed text access should be an objective of library service, new techniques to speed or replace interlibrary loan service are required. Addressing these problems, the research libraries, acting collectively, and now the NCLIS have had to seek ways to provide bibliographic and resource service in the future. Several useful studies leading toward possible answers have been completed or are in progress.

As a next step toward the goal of providing access to research libraries, the Association of Research Libraries (ARL) was asked to examine the considerations that would be encountered in developing a plan either for a single national bibliographic and resource center or, alternately, for a national system of such centers.

They were asked to recommend one or the other as a preferable solution to the need. Cracks in the structure of interlibrary loan agreements make it necessary to provide a national "backstopping" arrangement to guarantee the user access to materials without undue or unreimbursed costs being imposed on existing public or private research libraries.

Professor Rolland Stevens, University of Illinois, the principal researcher for the NCLIS contract, examined the existing records of traffic in interlibrary loans, studied the current trends in library cooperation, and pondered the emerging patterns of centrally organized bibliographic and resource service in this country and in Great Britain.

Stevens enjoins the NCLIS to:

1. Determine the appropriate regions of the United States in which a national system for interlibrary loan should be organized. The "appropriate region" may be a single populous state which already has a hierarchical or other interlibrary system, or it might be a group of adjoining states.
2. Designate one existing library as a bibliographic center in each region.
3. Designate other libraries having outstanding or strong collections in a number of subject fields as resource centers. These will be libraries which have been important sources for interlibrary loan in the past, and they will be responsible for continuing to make their collections available to meet the nation's needs.
4. Designate the three national libraries—the Library of Congress, the National Agricultural Library, and the National Library of Medicine—plus the Center for Research Libraries to serve as national centers, the responsibility for loans to be divided among them according to their collection strengths.
5. Draw up contracts with the libraries designated as bibliographic centers, resource centers, and national centers, outlining their responsibilities and stipulating the grants, transaction fees, and other compensation they will receive for services.
6. Serve as a coordinator to establish policies, make decisions, maintain fiscal accounts, and perform other continuous tasks necessary to keep the system working.

The NCLIS has received the ARL recommendations and used them as the basis for a contract awarded to the Westat Corporation of Bethesda, Maryland. Westat has been asked to provide the conceptual design of both the bibliographic and the resource centers, defining both their scope and content, to give an approximation of developmental and operating costs, and to offer some guidance regarding their management.

FUNDING PROBLEMS OF LIBRARIES

All types of libraries seek additional funds to maintain and improve their services. Corporate, private, and public sources for these funds are under increasingly heavy demands from all quarters, so the arguments for libraries must be eminently persuasive if they are to succeed.

The commission's need to understand the legal basis for the funding of public libraries arose, in part, because of the current challenges to the local property

tax as an equitable basis for the collection and distribution of public monies for education. If education funds were to be changed to some new or wider tax base and if educational disbursements came from new sources, libraries and library funding would soon come into question.

The commission has considered the implications of recent court decisions in California and elsewhere, holding that the local property tax is not the proper base for public school funding. The commission believes that the same principle of equality in educational opportunity must be applied to the nation's public libraries and other publicly supported information facilities, whose resources and services are a vital part of the continuing educational process. If, as is possible under various legal challenges to the system, the current method of funding public schools is changed, library funding must change, too. It would be unfair to have schools operating on a broad tax base and libraries under a more restrictive one. The commission calls upon public libraries and publicly supported information facilities across America to watch these developments closely and to be sure that the target of national equality of access to information for all citizens is a priority, not an afterthought.

The financing of library services was the most discussed issue in the hearings. Present methods of public library financing are uncertain and inequitable and they generally produce inadequate funds for quality library service. The federal government was seen as the best source of funding for many of the library and information service programs proposed in testimony before the NCLIS. It was suggested that federal funds should:

1. Support the nationally important collections and services of large public and private libraries.
2. Subsidize development of appropriate library services to ethnic minorities and other disadvantaged groups.
3. Give special aid to libraries in Black colleges.
4. Provide the large sums necessary to establish a national lending library.
5. Expand the national services of the Library of Congress.
6. Support the technical research that will lead to improved service.

Federal funds for libraries were used quite differently in different states; some spent the money for state-level direction and coordination; others used it for new or improved local services. Typically, federal funds constituted one-half of a rural library's annual budget and about 10% of an urban library's budget. The principle of requiring matching funds from state or local sources was questioned because it tended to prevent the poorest libraries from participating in federal grants or else caused them to distort their programs in order to provide matching funds.

There is a close legal relationship between public libraries and state government. As subdivisions of the state, local units of government need either constitutional or statutory authority from the state to found and finance their public libraries. The extent of the taxing powers and bonding authority established under law for library purposes is significant to the continued viability of local libraries.

The justification for such state aid to libraries lies partly in the assumption that public libraries are an integral part of the educational system and that the states should assume, therefore, a responsibility for their direct financial support. This belief reflects the long-established tenet that the state is responsible for the education of all its citizens. Several other arguments are used to support state aid to public libraries. First, the state is the logical government unit to assure sufficient public library facilities. Second, since the state may set standards of service, it should provide financial support for the attainment of these standards. Third, the state should strive to make services equal in all areas, regardless of economic disparities among the various local units. Last, the state has a wider range of income sources than local governments from which it may draw for library support.

It is clear that an opportunity exists for the NCLIS to provide the leadership toward the formulation of new patterns of library funding. Government Studies and Systems, Inc., a Philadelphia concern, has received a commission contract to assist with this task. Their charge is to provide the National Commission on Libraries and Information Science with a study of feasible alternatives for the future funding of the public library and its ancillary public information services as they may exist, and to project, in the light of modern public goods theory, the financing mechanisms that will be needed to replace those that are no longer acceptable to our society. Their work is to produce recommendations on the possible future role in library finances of state aid, local taxes, and local nontax support. It is also to recommend a method of collecting and distributing public funds among public library and information systems.

Our major research libraries have some problems not encountered on such a large scale by the neighborhood library, the specialized information center, or the data service center. Because these libraries are national resources, their problems are important to all.

The commission heard impassioned testimony on the financial dilemmas faced by large research libraries that serve both a local clientele and persons around the nation who need their unique resources. As cooperative networks increase, so do the costs and the demands for service. Contributions defray some expenses, but they do not pay total costs, nor do they compensate for the development of the collections on which new services depend. Privately supported libraries are in particular trouble. Endowments are shrinking and the present tax rules for noncharitable institutions reduce their attractiveness to private donors who might otherwise contribute to support their services.

School libraries are dependent upon the school they serve for their funds. A wealthy school district can afford an inspired library program. A poor district may have no library program at all. Adequate funding of the school library appears to devolve in part from the value placed on libraries by the superintendent of schools. Priorities for supporting nonclassroom services determine the attitude toward libraries and the share of the funds they receive. Educating the chief school officer to the value of the library in the educational process thus becomes an important task.

NEW TECHNOLOGY IN INFORMATION SERVICE

New technological capabilities and the fast-growing interest in networking have engendered experimentation with various information systems and resulted in a proliferation of incompatible systems. Computerized networks and data bases have expanded the body of information available to those who need it, but access must be made separately to each data base at great expense. In many places the needs do not warrant the expenditure.

Two systems were pointed out as important examples for building a national network. The Library of Congress MARC program was highlighted because it developed somewhat differently from others in that the originators set out to develop a standard format for the interchange of bibliographic information first and then converted their records to it, rather than the reverse. The Ohio College Library Center, suggested as a possible prototype, was described in detail in testimony. The system has not yet realized its full potential but it has had success in catalog card production and other efforts. Costs for book processing have decreased in member libraries, and staff personnel in those libraries have been freed to perform services for users.

In library and information services, the computer has not as yet lived up to the promise of the Sunday newspaper supplement pictures of a push-button information dispenser. The computer *is* saving time and money for administrative tasks of accounting and record keeping. It has accomplished little to date that is of benefit to the general reader in his search for current or historical information. Some large data bases are operating successfully on computers; indeed the largest data bases could not be kept up-to-date or manipulated quickly without a computer. As the costs of the programming required to instruct the computer to perform intellectual tasks are reduced, more services will be provided at remote terminals by computers. Remote delivery of text, an expensive curiosity at present, is likely to be widespread in many areas as techniques for speeding page-image transmission improve and the cost per page of transmission decreases.

Audiovisual specialists described multiple means for presenting information in the form most appropriate to the needs of the user and for creating information within the library. Such capabilities appear particularly valuable for students and nonreading information seekers. The role of creator of information is a new one for libraries and is not widespread. Capable personnel to direct such programs are few, and the equipment is complex and expensive. A critical source of evaluation would be helpful to cope with the profusion of new and improved devices that continually appear on the market.

Cable television (CATV) holds possibilities for developing new library services and for providing remote access to present services. The channel capacities presently available to libraries are likely to be insufficient for the uses they will find. The public appears unprepared to accept and use cable television for nonentertainment purposes even though it would appear to be an ideal way to extend the services of libraries to rural and otherwise isolated patrons. The expense of a rural cable

program might be borne by a kind of administration such as the Rural Electrification Administration, which brought electricity to remote areas. CATV is still in its infancy. Screened images are not perfect, portable equipment for recording is far from light and convenient, and there is a shortage of personnel trained in the necessary technology.

HUMAN RESOURCES

No resource is more critical to any library or information service than the personnel who serve in it. The quality of their training, the appropriateness of that training to existing and changing conditions, and the attitude of those who serve can make or break programs and provide satisfaction or discontent among those served. There are at present more professional librarians available than there are funds to hire them for the work that is to be done. Exceptions exist in a few areas.

The demand for librarians who are members of minority groups exceeds the supply. Qualified technicians to use and maintain automated and audiovisual equipment are hard to find. Many professionals find their training out-of-date in libraries catering to previously unserved groups, using impersonal mechanized systems, and providing services never before considered appropriate to libraries. Rural libraries find themselves unable to afford professional services. The low economic status of libraries affords little incentive for individuals to acquire graduate-level training and then return to a low-paying job. Times of manpower oversupply present opportunities to improve recruitment and selection procedures. A method is needed to predict manpower demands in time for changes to be made in these procedures and in training activities. Recruitment needs to begin in high schools and community colleges with the projection of an accurate image of today's librarian. Special efforts need to be made among minority groups. Minority staff members need to be seen; jobs and work scholarships need to be made available. Scholarships are expensive, but the schools offering them report that they are a good investment in the future. Library schools must be more selective in choosing their candidates. The suitability entrance test, once discarded as too expensive, could be revised and revived. Candidates with special skills and aptitudes might be selected over those of general acceptability. Size of student populations in library schools should have some relationship to the jobs available when they graduate.

Retraining, in-service training, and continuing education for all staff members are three necessary steps in this age of rapid change. In these programs lie opportunities for changing attitudes and improving the quality of service in every department of the library. However, administrators and trustees must be convinced of their value. Released time for training has been unavailable and programs few. To be valuable, these courses must be well planned and specifically relevant to the needs of the participants. Opportunities abound for cooperative approaches to the provision of training, but care should be taken not to make them a mere added responsibility for regional and state administrators, whose major concerns are with other matters. Because of financial difficulties in local libraries, federal and state

support of these programs may be necessary, either directly or through the provision of fellowships and grants for participation in them.

Trustees, friends of the library, citizen advisory boards, and other groups are a vital part of the human resources of library and information services. Boards are sometimes ineffective because members do not know what is expected of them nor do they know where to find materials that would make their role clear to them. Beyond that, there is a need for very specific information to help them in making decisions. The most effective boards appear to be those that take seriously their role as liaison with the community, learning its needs and guiding library services toward meeting them. They can be knowledgeable spokesmen for library interests before governmental funding agencies. These citizens, the politically knowledgeable and those with personal influence, are excellent lobbyists.

There is a rapidly increasing need within the library and information science profession for an established nationwide program of continuing education. Expressions of need for such a program have come from national, regional, and state professional associations; schools of library and information science; state and national libraries; and from librarians, information specialists, and their employers. No national coordinated action has been developed.

In the framework established for NCLIS activity, the development of human resources for information service is an area of special concern. To plan a national program for retraining those who need it, the Catholic University Library School, under contract to the commission, has provided recommendations for a nationwide program for the continuing education of professional librarians, library technicians, and library trustees. The recommendations outline a national framework for the program, provide for quality content of the educational experience, and involve all levels of institutional support: state, regional, and national associations; state and national libraries; and schools of library and information science. The report has been published by the commission.

NATIONAL NETWORKS AND LIBRARY COOPERATION

National networking of libraries is an issue complicated at the present time by the numbers of existing regional and mission-oriented national systems that have few connections and multiple incompatibilities. Many exist on less than their projected costs. This hampers their efficiency and quashes plans for future improvements. The necessity to plan for system needs years ahead of time requires the assurance that funds will be available as those plans mature. Basic issues must be faced before a national system of networks can be built. Principles must be established; successful networks need protocols and a formal structure.

Encouraged by federal and state leadership and funding and by the prospect of providing better service at lower cost, cooperative efforts have sprung up across the nation. They include simple communication systems to facilitate interlibrary loan through centralized processing and union catalogs, shared reference services, inservice training, and even shared staff members. Some cooperatives include only

one type of library, i.e., public or college; others cross types of library. Their administrative structures vary as greatly as do their services and membership. The degree of formality in a cooperative appears to be a function of size. Some are more successful than others. Strong cooperatives require firm funding, a legal base, a willingness on the part of members to yield some local authority, a structure that will survive changes in personnel, and provision for growth and change. The hindrances to success are preoccupation with the needs of individual libraries and the lengthy procedures of the variety of governing bodies involved. Workshops and continuing education programs, particularly those in organizational behavior, may help to bring about understanding of these human and administrative problems.

Corporate and other special libraries that provide special information services to the public remain an unassessed resource and, therefore, their role in cooperative programs and networking is, to a large extent, uncertain. A registry of their data and materials is needed. The resources of many large special libraries are well known and appreciated but most special libraries are small. Where geographical proximity makes it logical, industries have shared facilities and resources and benefited by having larger collections available at lower cost. In business libraries, cost is a pivotal factor. Library services are not profitmaking and, therefore, they often feel the brunt of budget-cutting actions. Administrators hestitate to allow their libraries to participate in interlibrary loan programs because of the overhead costs involved. Fees for services rendered may be the critical issue in encouraging cooperation.

State library agencies vary in their influence and function. Some are powerful originators and coordinators of state planning while others are principally program expeditors. State agencies are hampered by their sensitivity to political pressures, by salaries that are not competitive with those offered by city and university libraries, by the fact that they are asked to divide their efforts between providing leadership or overall state planning and conventional library services, by a historical orientation toward public libraries, and by uncertain funding and a low profile within the state government.

This summary of the testimony and studies covers most of the ideas. It cannot convey the excitement that has been present in the work of the NCLIS. Much of what has developed in the commission program has sprung from the hearings or been tested against the ideas expressed in the studies. The continuing interaction generated by the hearings is building a useful partnership for development of library and information service.

The National Program

Information, a commodity with a price, must be acquired, organized, preserved, distributed, and put to use without waste of effort, time, energy, or money. In the interest of this goal, the National Commission on Libraries and Information Science has been working toward a national program of library and information services.

Drafts of the program have been circulated to those whose constructive criticism can assist with the revisions. The ideas in the 1975 edition are unlikely to survive unchanged in the final recommendations, but it is important for the reader of this report to know that the hearings, meetings, studies, and conferences reported above have provided the basis for the ideas in the document. Six major points highlight the document.

1. A top-level agency in the federal government should be designated or created to develop, guide, and lead the nation's effort to coordinate its library and information services.
2. A policy establishing certain encyclopedic and specialized library and information collections and national resources must be developed and implemented.
3. Bibliographic services that cover wide segments of the printed and nonprinted literature and that serve extensive groups of users with the means to identify and obtain it must be designated and supported as national information utilities.
4. National telecommunication linkage of information service facilities, including computers, must be extended and subsidized to provide nationwide access to national resource library collections and to national information utility services from any inhabited location that has telephone service.
5. Improved efforts must be made to select, train, and retrain information system managers to deal with the complicated problems in this area of endeavor.
6. Existing state and regional library and information programs can become the building blocks of a national program. The partnership of federal–state–local services must be developed to make the best use of resources, reduce duplication, and accomplish at each level the tasks best suited to that level. State programs that mirror the federal program in organization and operation can contribute greatly to a unified attack on this important problem.

The national program proposed by the commission represents an overall structure within which current deficiencies can be corrected and future requirements can be addressed. The program is evolutionary and does not pretend to solve all of the problems besetting today's library and information world, but it does set forth certain objectives that can guide its development and improvement.

The NCLIS is firmly committed to the continuation of categorical federal aid as part of the national program. Although past federal funding achieved many worthwhile objectives, the results fell short of the original goals and much more remains to be done. The proposed national program would coordinate and reinforce all federal efforts to support local and specialized services and, at the same time, provide a national framework for planned, systematic growth of library and information services in the public and private sector.

Program Objectives

1. Ensure that basic minimums of library and information services adequate to meet the needs of all local communities are satisfied.
2. Provide adequate special services to special constituencies, including the unserved.
3. Strengthen existing statewide resources and systems.

4. Develop and continually educate the human resources required to implement a national program.
5. Coordinate existing federal programs of library and information service.
6. Make the private sector an active partner in the development of the national program.
7. Plan, develop, and implement a nationwide network of library and information service.

The NCLIS believes that only by welding together the pluralistic cooperative programs of the past and providing a national frame of reference for future development will the nation be able to achieve optimum exploitation of the rich information and knowledge resources in the United States. Meeting these priority objectives constitutes the sum of the commission's proposed current program. It attacks problems and deficiencies on a broad front and provides a comprehensive approach toward their solution. In some instances, existing programs would be strengthened or reoriented. In other cases the commission would initiate new programs—such as the nationwide network. To bring this all about will require new legislation. This legislation would: define the total program, assign responsibilities and functions within the federal government to relevant agencies, provide necessary authorizations, and recommend multiyear appropriations commensurate with program requirements.

OTHER ACTIVITIES

The NCLIS has been pressed, and indeed sometimes tempted, to diffuse its efforts in many directions not described in the material above. When there has been a digression, the cause has been one whose underlying nature is congruent with the central concerns of the commission. Copyright is one such issue; the Senate Joint Resolution 40 calling for a White House Conference on Library and Information Service is another. The broad charge of the commission embraces such a multiplicity of problems that a catalog of them would fill a volume of this encyclopedia. The reader who seeks exhaustive information on all of the commission's work is urged to read the *Annual Reports,* available from the Government Printing Office.

PROPOSED LEGISLATION

Future legislation will have as its objective the nationwide network and will outline the role of the federal government, the national libraries, the states, and the private sector in its development and implementation. It will also specify the functions that should be performed centrally; it will establish the basis for appropriate federal–state and state–local matching funding to guarantee a continuing federal and state investment; it will create a new federal agency for implementing the policies and programs of the NCLIS. Finally, legislation must safeguard the various aspects of privacy, confidentiality, and freedom of expression. The commission's intent is to create a program that is going to enforce, enliven, and

enspirit this country's creative powers, so that more can be achieved with our total intellectual and knowledge capacities. The NCLIS sees the program as a force for productivity and creativity and not as an authoritative and inhibitive constraint.

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NATIONAL FEDERATION OF ABSTRACTING AND INDEXING SERVICES

History

In December 1957, representatives of abstracting and indexing services in different fields of science and technology held a conference to consider common operating problems and the possibilities of cooperation and coordination. On January 31, 1958, the conference delegates, impressed by the advantages of continuing the work initiated at this meeting, established by unanimous action the National Federation of Science Abstracting and Indexing Services. On April 29, 1958, the federation was incorporated as a nonprofit organization in the District of Columbia. Headquarters were established in Washington, D.C., and moved to Philadelphia in December 1967.

In 1972, the members voted to change the name to the National Federation of Abstracting and Indexing Services (NFAIS), thus broadening the membership to include services in the social sciences and the humanities (Table 1). Federation members are corporate organizations that are eligible for membership under the federation's bylaws. There are no individual members. The federation is governed by a board of directors which is elected by the member services, and the organization is supported by member service dues, project revenues, and grant and contract funds.

Several projects of significance were undertaken during the first 10 years of the federation's life. One of these was an attempt to develop a national plan for abstracting and indexing services in the United States. This plan was prepared for the federation by Robert Heller and Associates in 1962 and was published as a special supplement to the NFAIS 1963 conference proceedings (*1*). In the mid-1960s the federation explored the distribution of scientific literature published in

TABLE 1

Abstracting and Indexing Services: An Updated Report of Coverage[a, m]

Category of Membership	1957	1969	1970	1971	1972	1973	Estimate 1974
Full Voting Members							
American Dental Association	—	7,180	7,289	7,358	7,388	7,514	7,600
American Geographical Society[b]	6,500	6,500	6,500	6,500	7,000	8,200	8,200
American Geological Institute	—	27,557	35,000	45,000	42,000	35,000	42,000
American Institute of Physics	—	20,900	20,000	27,000	30,000	30,000	30,000
American Mathematical Society	9,200	14,135	18,211	18,784	16,558	20,410	23,000
American Meteorological Society	6,000	9,500	10,244	7,500	7,200[c]	7,200[c]	7,200
American Petroleum Institute	11,615[d]	36,121	41,851	26,018	32,983[a]	37,606	39,000
American Psychological Association	9,074	18,068	21,722	23,000	24,000	24,409	25,500
American Society for Information Science	—	—	655	1,883	1,337	1,355	—[f]
American Society for Metals	8,219	25,011	24,255	28,100	24,400	29,219	28,000
Applied Mechanics Reviews	4,245	10,000	10,030	10,300	10,300	10,700	11,200
BioSciences Information Service	40,061	220,010	230,026	230,020	240,006	240,000	240,000
Chemical Abstracts Service	102,525	285,346	309,742	350,105	379,043	356,549	403,900
Center for Applied Linguistics	—	—	84	108	122	92	110
Documentation Abstracts, Inc.	—	2,638	3,129	3,309	3,618	3,722	4,000
Engineering Index, Inc.	26,797	52,905	67,600	85,243	81,837	73,376	75,000[g]
Esso Research & Engineering, Inc.[h]	—	—	—	—	—	—	—
Index to Religious Periodical Literature[i]	1,100	3,350	4,326	3,538	5,939	4,050	4,200
Medical Documentation Service[j]	1,500	3,102	3,425	4,000	2,500	2,500	2,500
National Association for Social Workers	—	973	1,034	1,066	1,008	1,109	1,109
University of Tulsa	—	15,841	16,247	16,924	15,502	16,775	17,000
Subtotal	225,836	758,237	831,370	895,206	932,806	909,786	968,519
United States Government Affiliates							
Atomic Energy Commission	14,042	52,519	53,080	60,296	60,848	62,167	64,000
Defense Documentation Center	21,015	47,393	44,319	43,251	36,900	34,899	34,000
National Agricultural Library[k]	98,409	93,066	80,121	110,000	124,000	113,000[l]	100,000
National Library of Medicine	104,517	224,000	210,000	206,000	221,000	207,000	210,000
National Oceanic and Atmospheric Administration	876	2,177	2,988	3,284	2,760	3,974	3,800
National Technical Information Service	—	38,400	43,650	48,670	54,980	55,597	60,600
Water Resources Scientific Information Center	—	10,300	10,500	14,000	15,000	15,300	14,000
Subtotal	238,859	467,855	444,658	485,501	515,488	491,937	486,400
Foreign Affiliates							
Information Service for Physics, Electrotechnology, Computers and Control (INSPEC)	16,452	88,440	144,442	147,332	154,074	154,269	166,000
TOTAL	481,147	1,314,532	1,420,470	1,528,039	1,602,368	1,555,992	1,619,919

a The National Federation of Abstracting and Indexing Services has compiled statistics of the number of items covered annually by its member services since the federation was formed in 1958. With the growth and evolution of abstracting and indexing services over the years, it has become increasingly difficult to present comparative statistical data. In this table, where possible, the data are presented under the name of the organization producing the services. As a result, users of previous tables may find some difficulty in making direct comparisons with earlier data.

b Coverage varied between 6,000 and 7,000 from 1957 to 1971 inclusive.

c No abstracts included in 1972–1973.

d Literature (worldwide) only.

e Augmented patent coverage in cooperative effort with Derwent Services.

f Clearinghouse ceased operation on December 31, 1973.

g End of February 1974, estimate.

h EREC believes that the statistics for its in-house abstract bulletins are not parallel to those for other member services. In recent years EREC has shifted extensively to equivalent bulletins published outside, chiefly by the American Petroleum Institute. Internal documents are still computer-based indexed, however.

i Does not include multiple entries or book reviews. Figures for the years 1969 to 1970 are estimates.

j 1957 is estimate.

k The figures given do not represent the total CAIN tape, but that portion that is published by Macmillan Information in The Bibliography of Agriculture. The remaining records, consisting of cataloging for monographs and serials is published by Rowman and Littlefield in The National Agricultural Library Catalog.

l Records supplied from CAIN data tapes to Macmillan Information, a division of Macmillan Publishing Co., Inc. for publication in The Bibliography of Agriculture.

m This table is updated annually by the National Federation of Abstracting and Indexing Services. This version represents the federation's membership as of March 1974.

mainland China and, with the support of the National Science Foundation, had a special program for several years to improve the availability of this material in the United States.

Basic Objectives

The purpose of the federation, as stated at the time of its original incorporation, is to foster, encourage, improve, and implement the documentation (abstracting, indexing, and analyzing) of the world's literature. Such documentation shall include, but not be limited to, education, research, publication of material designed to foster the interchange of information between services in the United States and foreign countries, and to provide for users the best possible information services. The federation's aims are to help the member services improve their services and operations; to act as a communication forum for members; to undertake specific projects on behalf of members that no one single member service would undertake alone and that would be broadly useful to the majority of member services; and to act as a national spokesman for the collective member services.

The original purpose and aims of the federation, as stated at the time of its incorporation, have remained basically unchanged. However, in the late 1960s the member services began an intensive debate which resulted in a reaffirmation of the basic purpose and objectives and an agreement that the federation should be concerned primarily with the abstracting and indexing (or accessing) portion of the information transfer process. At the same time, it was recognized that limiting the scope of the federation to science and technology was unnecessarily restrictive. The problems of abstracting and indexing are shared with services in the social sciences and the humanities. The membership voted in April 1972 to drop the word "Science" from the name of the federation and to open membership to eligible organizations outside science and technology.

In addition, the members realized that it is vitally necessary to interact with all segments of the information-processing and dissemination community, such as primary publishers, libraries, commercial and industrial abstracting and indexing services, data analysis centers, information dissemination centers, and people who teach or undertake research in the abstracting and indexing field. It therefore became a prime concern of the federation to develop communication, cooperation, and coordination with these other segments of the information-processing community.

CURRENT AREAS OF CONCERN

This reaffirmation of the basic purpose of the NFAIS took place as the organization prepared to celebrate its 15th anniversary. At the same time, a determined effort was made to look ahead and develop a program of activity that would further the objectives and be relevant in the 1970s. Late in 1972 the federation's board

of directors held a special meeting to identify the current areas of concern then facing abstracting and indexing services. Five areas were identified by the board and endorsed by the member services (2).

The five areas of concern as stated by the board are as follows:

1. The communication forum which the Federation provides for its membership should be continued and expanded, particularly to reach the related information transfer communities, both national and international, that are outside the Federation's present membership scope.

2. Prime attention should be given to the development of standards that will help provide links between operating systems and facilitate the use of more than one system to serve the information requirements of the ultimate users as well as information centers or other intermediary users.

3. Emerging special services to deal with information requirements of an intra-disciplinary or mission nature, should be encouraged to make use of the existing discipline- and project-based systems to avoid costly duplication of effort.

4. Federation members producing machine-readable bibliographic data bases are vitally concerned with the proposed networking developments. Joint study and negotiation are needed to take into account the economic problems involved both for the processors of information and for the information dissemination centers as the users of these services.

5. Federation members should provide the best bibliographic reference services in the world, but the value of such services is seriously diminished unless there is convenient access to the original primary documents. Thus, the provision of a coordinated document back-up service between libraries and accessing services is of vital concern to Federation members.

COMMUNICATION FORUM

The communication function of the federation is its essential basic activity, facilitating internal communication between the NFAIS and the member services, and external communication with the other sectors of the information industry. Communication is the basis for three of the federation's main activities. These are the educational and publication programs, and the conference and meetings activity.

The federation's annual conference, held during the first quarter of the year, focuses on topics of interest to abstracting and indexing services. Conference attendance is usually not restricted to members, and programs are organized to involve users, center and library representatives, as well as abstracting and indexing service producers. The Miles Conrad Memorial Lecture, named in memory of the first president of the federation, is one of the highlights of the meeting. In addition to the annual conference, the federation may hold special meetings as required by the interests of the member services.

Since its foundation in 1958, the federation has issued a newsletter which gives up-to-date news of developments of interest to abstracting and indexing services. It became a regular bimonthly publication in 1969 and is available on subscription.

Much of the member service news carried in the *NFAIS Newsletter* is written

specially by the service. The report series includes the text of the Miles Conrad Memorial Lecture. Lectures issued in this series with particular relevance in the 1970s are by Phyllis V. Parkins (BioSciences Information Service) on science information services and by Dale B. Baker (Chemical Abstracts Service) on U.S.S.R./U.S.A. scientific and technical information in perspective (3, 4).

Special publications may also be undertaken. In a joint publishing venture with the American Society for Information Science, a selection of key papers on the use of computer-based bibliographic services was published in 1973 (5). This volume was generated as a result of experience in another communication activity of the federation, namely the education program.

Three seminars form the basis of the education program. The seminar on Indexing in Perspective covers vocabulary development, index systems, and retrieval methods. The second seminar is on the use and evaluation of computer-based bibliographic services and explores cost considerations, scope of available services, technology requirements, Selective Dissemination of Information (SDI) and retrospective searching, etc. The third seminar deals with information sources and services and covers such subjects as document access, development of in-house current awareness and SDI services, and other topics. The federation draws on member services and nonmember experts as lecturers in these seminars.

Although originally conceived as a short course of 2- or 3-days duration that would provide a continuing education program for U.S. librarians and information workers, the Indexing in Perspective seminar has been expanded and tailored to meet the training requirements in developing countries. Arrangements have been made to run the seminar under UNESCO UNISIST sponsorship for developing country representatives. In addition, a modular training kit based on the material used in the seminar is being developed for distribution to teachers and educators, with particular reference to those located in developing countries.

Other Activities

In addition to the activities mentioned above, the federation is also involved in other programs of national and international importance. In 1961, the federation published a guide to U.S. abstracting and indexing services. This proved to be a valuable reference tool and was expanded, with support from the National Science Foundation Office of Science Information Service (NSF OSIS) into the *Guide to the World's Abstracting and Indexing Services in Science and Technology*, published in 1963. In 1969, the Federation for International Documentation (FID) issued a two-volume guide to abstracting services (6). Starting with a joint marketing agreement, the two federations began a program of international cooperation following the publication of the FID guide. Based on the already published directories, the two organizations are developing a machine-readable inventory of the abstracting and indexing services of the world. The initial development has been supported by NSF OSIS in the United States and the UNESCO UNISIST program in Europe. A

revised directory generated from the machine file should be published in 1976. By international agreements, the federations intend to maintain the inventory in the future.

The federation also attempts to fulfill its objectives through special committees which are established to concentrate on particular topics. Studies of abstracting and indexing services, educational programs for NFAIS members and users, and bibliographic standards are some of the current topics under study. In addition, the member services have representation on and liaison with the American National Standards Institute (ANSI) Z 39 Committee, the American Association for the Advancement of Science, and the Association of Scientific Information Dissemination Centers (ASIDIC). International liaison is maintained through the federation with such organizations as the International Council of Scientific Unions Abstracting Board (ICSU AB), the International Federation for Documentation (FID), and the UNESCO UNISIST program.

The member services, in their support of the federation and its program, are the initial assessors of how well the organization is performing and satisfying their requirements as members. As the services provide, through their annual membership dues, a substantial portion of the federation's operating income, a direct assessment of value received for dollars spent is a constant criterion applied to the federation's program of activities. In addition to direct participation in the federation, the communication channels that the federation provides among members and between members and other segments of the information industry have been and are being used to generate many bilateral cooperative agreements that are not directly credited to a specific NFAIS program. However, the greatest value of the federation is probably its role as a national representative of an important segment of the information community at a time when concern for information as a national and international resource is becoming of prime importance in the modern world. The federation program, which has its roots in the improvement of services and more effective utilization and better coordination of information resources, is playing an increasingly significant role in the national and international arena.

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STELLA KEENAN
TONI CARBO BEARMAN

NATIONAL FIRE PROTECTION ASSOCIATION

The National Fire Protection Association (NFPA) serves as the international clearinghouse of authoritative information on fire protection and prevention methods, fire fighting procedures, and fire experience analysis. As a voluntary membership organization open to anyone concerned with any aspect of the fire waste problem, and independent of any private or governmental special interests, it is the only association of its kind in the world.

NFPA's basic objective is to provide mankind with a fire-safe environment and to educate people to live with and use fire safely. Its basic function is the preparation of consensus standards and codes which are engineered to provide the best practicable barriers to the start and spread of fire and the most reliable means of protecting life and property in the event of fire. NFPA also conducts public information programs to point out the unfortunate consequences of failure to heed the advice provided by its standards.

The association in 1976 had approximately 32,000 members consisting of organizations and individuals from industry, commerce, government agencies at all levels, the military forces, insurance, architects, engineers, the other professions, hospital and school administrators, and others who have vocational and avocational interests in fire waste control. Additionally there are about 170 organizational members consisting of national professional, trade, labor, and public service associations. A substantial majority of the membership comes from the United States, with sizable representation from Canada and a scattering of members in more than 90 other countries.

NFPA was organized in 1896 in response to a need for standardized performance requirements for fire protection equipment, and a recognition of the value of interchange of information and the results of fire experience among those interested in the reduction of life and property losses from fire. These continue to be among the basic activities of the association.

Development of standards begins in the approximately 150 technical committees on which serve some 2,300 experts in their respective fields, who represent the various interests affected by the standards, including consumer or user interests. Rules of procedure call for preprinting of proposed standards, a hearing of outside views, and open discussion before the standards are accepted or rejected at meetings of association members.

Because of this quasi-legislative process, which guarantees opportunity for all to be heard, as well as the competence of committee members, NFPA standards have come to have great influence. Although the association has no power to cause their enforcement, they are widely used by federal, state, and municipal governments as the basis for laws and regulations, and extensively recognized in commerce and industry as requirements of good practice. Their effect extends well beyond the United States, with international recognition of the authority and objectivity of their provisions.

About 225 standards and codes have been developed to date on subjects ranging from air-conditioning installations to zirconium processing. Among the best known and most widely used are the National Electrical Code, which governs virtually all electrical installations in the United States; the Life Safety Code, which regulates exit and other life protection provisions in buildings; and the Flammable and Combustible Liquids Code, which specifies requirements for the safe storage, handling, and use of these materials. Of special interest to librarians are the recommended practices for the protection of library and museum collections developed by the NFPA Committee on Libraries, Museums and Historic Buildings.

The standards and codes, which are updated periodically, are published annually in the 15-volume, 9,500-page *National Fire Codes* and in separate pamphlet form. [The *National Fire Codes* are available in microfiche from Information Handling Service (IHS) and IDAC.]

Additionally, NFPA publishes more than 800 different titles ranging from technical works to fire safety posters in carrying out its informational and educational functions, disseminating some 18 million copies of this material yearly. Among the best known publications is the *Fire Protection Handbook*, a 2,100-page encyclopedia on the subject. There are three NFPA periodicals as well: the bimonthly *Fire Journal*, the quarterly *Fire Technology*, and the monthly *Fire Command!* for the fire service. (*Fire Journal*, *Fire Technology*, and *Fire Command!* are available in microfilm from Xerox University Microfilm. Additionally, *Fire Technology* abstracts and indexes significant articles appearing in *Fire Technology* and *Fire Journal*.)

Almost since its inception, NFPA has systematically collected and classified information about fire experience. In the files of its Fire Analysis Department are detailed reports of many thousands of individual fires. Analysis of this mass of data produces a number of annual summaries of life and property losses from fire, as well as many valuable studies of the special problems of many occupancies and of special hazards.

The data is also an important means of checking the effectiveness of prevention and protective measures, and of signaling areas where action is urgently needed. It is the basis for the many campaigns NFPA has waged to improve life safety, for example, in nursing homes and schools, and to control the use of fireworks.

The association has an active program seeking to alert the general public to fire hazards and to induce action to correct them. Much of the public education effort is directed at children, using the character of Sparky the Fire Dog as a way to get

their interest and response. NFPA orignated Fire Prevention Week in 1922 and Clean Up for Fire Safety in 1926 as means, still in use, to focus national attention on the subject of fire.

NFPA maintains a professionally staffed library whose collection deals with all aspects of fire sciences: fire prevention, fire protection engineering, fire research, statistics, fire department management and apparatus, hazard studies, building construction and materials, occupancy studies, state codes and municipal ordinances, fire extinguishing systems, flammable liquids and gases, and industrial fire protection. Input sources include unpublished reports on fire research as well as all major fire science-related publications.

CHARLES S. MORGAN

NATIONAL LENDING LIBRARY FOR SCIENCE AND TECHNOLOGY (BRITISH LIBRARY LENDING DIVISION)

Introduction

The National Lending Library for Science and Technology, founded in 1961, was merged with the British Library on its formation in July 1973. The report of the National Libraries' Committee, the Dainton Report, was published in 1969 and its principal recommendation was that the administration of the British Museum Library, the National Reference Library of Science and Invention, the National Lending Library for Science and Technology, the National Central Library, and the British National Bibliography should become the responsibility of a new statutory, independent public body. The essential recommendations of the report were incorporated in a White Paper presented to Parliament in 1971, by which time this complex of libraries had gained the collective title "the British Library." From this followed the British Library Act in 1972, setting up the British Library Board to control and manage the constituent parts.

The structure of the British Library comprises three divisions plus a central administrative unit. The Reference Division comprises the former British Museum Library in Bloomsbury, and its division, the National Reference Library of Science and Invention—now renamed the Science Reference Library; the Newspaper Library at Colindale; and the Library of the Library Association. The Bibliographical Services Division takes in the British National Bibliography plus those departments of the former British Museum Library concerned with the production of records and its stock.

There is a Central Administration and a Research and Development Department, incorporating the Office for Scientific and Technical Information (OSTI), which

previously was under the control of the Department of Education and Science.

The British Library Lending Division (BLLD), which was formed on July 1, 1973 by the merger of the National Central Library and the National Lending Library for Science and Technology, is situated at Boston Spa in Yorkshire. The stock and services of both former libraries are maintained by the BLLD. The total site is 60 acres, only a small amount of it at present occupied by buildings. The present buildings provide 72 miles of shelving, which will be full in 1977. The staff exceeds 650 in number; of these, about 110 are in professional grades.

The BLLD has about 2½ million volumes of books and periodicals and over 1½ million documents in microform. The main categories of acquisitions by the BLLD are:

All significant serials in any subject or language (115,000 titles held altogether, of which 47,000 are currently received).

All significant English-language monographs (over 1 million volumes held and increasing at about 55,000 annually).

Monographs in other languages—Russian scientific books comprehensively (over 100,000 volumes held), others selectively or on demand.

Report literature as comprehensively as possible (about 1½ million—mainly on microfiche).

All British government publications since 1962, all UNESCO publications since 1954, all EEC publications since 1973, plus a considerable stock of earlier publications in these categories.

Conference proceedings on all subjects and in any language (over 65,000 held).

Translations (some 300 cover-to-cover translated journals are subscribed to, and over 300,000 article translations held, the latter increasing by 30,000 annually).

Printed music, excluding sets and "popular" music.

Serials are mostly part-bound to increase availability (one part on loan does not incapacitate a whole volume, nor does binding at the end of the year).

Loan and Photocopy Services

The BLLD aims to provide a rapid loan or photocopy service from its stock to all registered institutional borrowers in the United Kingdom. In addition, an overseas photocopy service is available to anyone anywhere in the world. An overseas loan service is available to certain national centers by arrangement.

Nearly 2.5 million requests were received in the year ending March 31, 1976, 12% of them from overseas. The BLLD is currently handling around three-quarters of all interlibrary lending in the UK. The current increase in demand is 10–15% per annum.

When an item requested is not held by BLLD—about 83% of valid requests are—then the service is supplemented, where appropriate, by forwarding the request to certain backup libraries (the Reference Division of the British Library, copyright libraries, and certain "paranational" and special libraries), by providing

locations, or by applying overseas. Locations are usually supplied by return of post, though service from backup libraries will take longer. The service is based upon the use of prepaid requisition forms. Well over 60% of all satisfied requests are supplied as photocopies.

Other Services

The BLLD adds to stock items disposed of by other libraries; items surplus to its requirements are offered to libraries on monthly lists. Consignments of material can be accepted by prior arrangement.

The BLLD is the UK center for MEDLARS. It also offers a translations service to UK users of articles and more occasionally books which have been published in languages other than French, Spanish, or Italian.

A program of courses and seminars is organized each year for librarians and information workers. Many of the courses include substantial periods of practical work using the extensive literature resources of the division. A Public Reading Room is maintained in which there is a comprehensive collection of guides to the literature, and which visitors can use during normal office hours.

A. G. MYATT

NATIONAL LIBRARIES

The "national library," in modern librarianship, encompasses a rather wide range of libraries which differ from one another both in their problems and in the nature of their activity.

There is no definitive agreement as to the typological features of the national library. Until recently, most specialists thought that archival storage of national publications was the function that took precedence over all others. This point of view is justified by the fact that this function alone is precisely what gave rise to the national library.

The development of the national library as a type of library was associated with the development of the bourgeois sovereign states as a result of their attempt at consolidating national science and culture. The national library was established to collect and preserve publications setting down the intellectual achievements of one or another country.

This process was begun in 1795 when the French National Convention declared the library, previously belonging to the kings, national property, and granted it the right to obtain deposit copies of all printed publications of the country.

In the 19th century, following this, national libraries were established in more than 20 countries. During the 20th century, 30 more were founded. This process

took a particularly active course in the decade after the end of the Second World War, when there appeared to be a process of decolonialization, and new democratic systems were established in many countries. From 1945 to 1965 alone, 13 new national libraries came into being. This process continues.

Not all the libraries which are in fact national ones have official status. There are now more than 30 such libraries. Of these, less than half had official status up to 1945. Later on, another group of libraries, which had been established earlier, obtained official status, as well as all the newly created libraries.

Thus, not only the intense development of new national libraries but the legal designation of their function and role was characteristic of the last decade.

During its existence, the national library as a typological concept underwent a significant evolution. Approximately a century and a half of its development took place more or less quietly and harmoniously.

A basic principle of acquisition of stock of an overwhelming majority of national libraries was that of exhaustiveness. It was formulated by Anthony Panizzi, a distinguished English librarian, most skilled of all in his time, whose activity was associated with the formation of the British Museum Library—one of the largest national libraries in the world. Panizzi thought that the British Museum Library should have "the best collection of English literature and the best collection of literature of all other countries outside of each of these countries." Maximum completeness of acquisition of printed works in all branches of knowledge of all nations and in all languages—this was the goal toward which all national libraries once strived.

This aspiration was at one time not unsuccessful. For example, the Library of Congress, the Lenin State Library, the British Museum Library, and the National Library in Paris are unique with regard to content and size of collections of both national and foreign editions. But, if the collections of only certain national libraries have international significance, then within each country, in an overwhelming majority of cases, it is the national library itself which is the richest and the largest.

As an estimate (in the absence of standardized library statistics), it is apparently possible to consider seven national libraries in the world as possessing the largest collections, numbering more than 5 million units of storage: U.S.A.—over 55 million; U.S.S.R.—over 25 million; France—approximately 20 million; the Federal Republic of Germany—over 9 million; Great Britain—over 8 million; Rumania—about 6 million; and Hungary—over 5 million.

Twenty-seven national libraries have holdings exceeding 1 million storage units. Four of them are in Asia (the Democratic Republic of Viet-Nam, India, Mongolia, Japan), three are in America (Argentina, Brazil, Cuba), two in Oceania (Australia, New Zealand), and the remaining are in Europe.

During the first century and a half of their development, most of the national libraries had relatively conservative policies with regard to service to the public; there was limited access for the public. This is explained by reasons of a sociopolitical nature and by historical traditions. Many national libraries, while established on the basis of universities, retained not only their old functions, but also the main clientele—teaching staff and university students.

In relation to other libraries of their countries, national libraries occupied, in fact, an independent and exceptional position: They did not participate in either inter-library loan or other forms of library cooperation. Attempts of progressive library forces to change this situation were not successful. (This was the situation, for example, in Great Britain, where the question of functions of the British Museum Library was debated without success already in the 1920s.)

In the last decades the situation has drastically changed. In the middle of this century, there appeared signs of a crisis in the activity of the national libraries. First, they were associated with social causes. Growth of the number of people in-volved in science and technology created the need to broaden the use of informa-tion sources beginning with printed works. The character of the old national libraries activity, with limited access to their collections, ran counter to these new demands. In the second place, the crisis became evident as a result of the extraordinarily rapid pace of scientific progress. This phenomenon, along with the rapid pace of cultural progress, was directly reflected in world printed production, where the volume reached gigantic proportions and has continued to increase annually in forms which are becoming all the more diverse. The increase in volume of world publications has hampered all operations of the national library. Acquisition be-came complicated—regarding control to assure exhaustiveness in receipt of the deposit copy of national publications as well as selection of foreign books necessary to the library. The rapid growth of collections led to a lack of space for new acquisitions, and the rate and means of increasing storage capacity inevitably fell behind the rate of collections growth. The processing and organization of collec-tions, as well as maintenance of catalogs, became extremely complicated. Finally, it became more difficult to even sustain previous delivery schedules of books to readers from the stacks and to effectively inform readers about new literature.

In the third place, special libraries were growing and becoming substantially more firmly established, having, in light of new reader needs—particularly in the fields of science, technology, and economics—a number of definite advantages over gen-eral libraries, including national libraries. The advantages of the special libraries were first of all in the content and type of their holdings. The limited range of sub-ject areas for which each of them is specialized permits them, within this specializa-tion, to acquire literature with much greater completeness than would be possible for general libraries. Periodicals, which until recently were inadequately acquired by most general libraries, were especially widely introduced. Special libraries, in the area of readers service, do not have fewer advantages. The nature of their service—speed of delivery of library materials, greater detailing in the development of ref-erence system, and the wide development of reference–information service—satisfies readers much more than the conventional forms of service of general libraries.

In the fourth place, associated with this is the fact that all over the world, not only have a number of libraries grown considerably, but there was a tendency to-ward their cooperation and creation of whole library systems. A need to centralize

and coordinate library activity was observed. It would be natural to entrust the resolution of these problems to the national library as the main library of the country, with the largest collections, adequate finances, and qualified personnel. However, the traditional isolationism, the exclusiveness of the national library posture in relation to other libraries in the country was running counter to this trend.

The difficulties experienced by national libraries and successful development of special libraries were cause for opinions to be voiced on the supposed incompatibility between the new requirements placed on libraries and the traditional functions of national libraries. There was a tendency to regard them as "stagnant" institutions whose prime was already a thing of the past. The question arose as to the feasibility of their future existence only as archives of national publications. The national libraries had come, it seemed, into a crisis.

At the same time, it was still obvious that national libraries had many specific features which justified their existence, regardless of all the advantages of special libraries.

First of all, their traditional functions are those of acquisition, storage, and organization for use of the most complete set of national printed output. There is no doubt about the importance of these functions in the present situation.

Second, over decades and even centuries, the national libraries have accumulated general collections of foreign literature which no other library in the country can match.

Third, these holdings consist of literature covering some spheres of knowledge for which there are no independent special libraries. They also have rare-language publications which cannot be handled in other libraries due to lack of personnel familiar with these languages.

In addition, as has already been noted above, at the present stage of library service development the need is all the more acute in centralization, standardization, and coordination of library activity, both within the country and on an international scale. It is expedient to entrust the implementation of these problems to the national library—with a rich collection and rich reference facilities, sufficiently financed, and with qualified personnel.

In library science thinking of the 1950s and 1960s, there is hardly a problem found causing more contradictory points of view than the "national library": "The national library is one of the most important parts of the library system of the country." And simultaneously, the pessimistic prognosis: "The national library is an archaic phenomenon, a dying, ineffective organism." "The future of the national library is specialization." And the contrary opinion: "The strength of the national library is in the general nature of its holdings." This discrepancy in views was caused by the unusual complexity of conditions in which the national library now acts, and by the varied factors determining its development.

One of the most decisive among these factors is the specific nature of modern science, reflected in subjects of printed works and in the content of reader requests, which objectively condition main features of the library system. The development

of the national library as a form of research library is integrally connected with the development of science, and vice versa; this relationship is becoming all the more obvious with the passage of time.

Differentiation and integration, characteristic of modern science, is having a direct effect on printed output and consequently on the content of library holdings and the type of reader interests in special literature.

As a result of differentiation there is a growth in the number of books devoted to very narrow fields of knowledge. This complicates considerably the problem of acquisition of the national library foreign literature stock: In the avalanche of specialized publications, it is more and more difficult to select the important books and journals. The advantages in a given case are on the side of the special library; limited by a definite range of disciplines, it can achieve relative exhaustiveness in terms of its profile.

Under the effects of integration the quantity of materials grows in the adjacent and synthetic sciences. Selecting these materials for libraries, even if not more, is not less complex. The integration of disciplines particularly hampers the work of special libraries. As a consequence, the tendency is for them to be converted into multibranched ones (this more obviously affects the large libraries).

Integration of the sciences is also reflected in the type of specialization of the modern research worker. Along with the narrower specialization, some erudition, or at least an orientation, in the basics of the other sciences is required. An ever-widening interest by readers has been observed in publications on associated (and sometimes, at first sight, extremely remote) branches of knowledge.

It is quite obvious that the demands on literature by specific branches of knowledge can be met most completely by special libraries; related questions and complex problems are much better represented in the holdings of the general library.

Thus, to differentiation and integration of sciences, to specialization and "hybridization" of a modern research worker, correspond the two basic types of research libraries—special and general. Independent, complete, qualified service to the science of our time is beyond the power of either of them. The indisputable conclusion follows: Satisfying the demands of the present-day reader—the researcher and specialist—is possible only as a result of the coordinated, mutually complementary activity of both types of libraries. In other words, development of science dictates establishment of a system of libraries.

The idea of a "common system" of libraries was for the first time realized in the Soviet Union, and later in the other socialist countries as well, where it was supported by country-wide planning for the development and guidance of libraries.

However, the other nations gradually began to feel more acutely the need to create a similar system.

At present, under the auspices of UNESCO and the participation of the Federation for International Documentation (FID), the International Federation of Library Associations (IFLA), and the International Council on Archives (ICA), work is being carried out on planning national documentation, library and archival

infrastructures indicative of a common recognition of the importance of this problem, and a beginning toward its practical solution on an international scale.

Beginning with the 1950s it became evident that more and more attention was being devoted in international library publications to the national library as a type of library; problems associated with its development gradually occupied a more important place in the agenda of international meetings.

Among the developments and facts of library life of the last three decades which represent important contributions to the study of the problem of the national library, the following can be cited:

In 1952, in Copenhagen, at the session of the general council of IFLA, a combined section of national and university libraries was created; from that time the question of national libraries became the subject of discussion of the annual sessions of IFLA.

In 1955, in Brussels, the Congress of Libraries and Documentation Centers was held. At one of the section meetings, a resolution was adopted on the problems of the national library, which was in its way the first manifestation of a group of national libraries and gave impetus to the convocation of a Symposium on National Libraries in Europe.

In 1957, in Brussels, the Symposium on Methods of Library Work was held, in which librarians of the Western European countries discussed basic aspects of organization of librarianship in the U.S.A. in conformity with the practices of their libraries; participants of this symposium concluded there was a need for further discussion on a regional basis, in connection with the highly specific nature of library development in Europe.

In 1957, this decision was implemented: a Symposium on National Libraries in Europe was organized in Vienna.

In 1963, in Bangor, a conference of the University and Research section of the Library Association of Great Britain was held, at which the question of national libraries also came up.

In 1964, a regional seminar on the development of national libraries in Asia and the Pacific area took place in Manila.

In the period 1963–1965, within the Section of National and University Libraries of IFLA, a comparative study of functions of the four large national libraries was carried out: Great Britain, France, U.S.A., and U.S.S.R. Recommendations for future development of national libraries were made based on this study.

In December 1970, in Kampala (Uganda), at the meeting of experts on national planning of documentation and library services in Africa, special attention was paid to the problems of national libraries.

In 1971, in accordance with the resolution of the IFLA Section of National and University Libraries, the Center for Statistical Data on National Libraries was founded at the National Library of the Netherlands—the Royal Library in The Hague. The center regularly sends out questionnaires to libraries. Data collected in this way can be used as a basis for organizing new national libraries.

In November 1974, the idea of creating an international association of national libraries was considered by the conference of the directors of national libraries organized on the initiative of the National Library of Canada. Further discussion of this problem took place during the IFLA General Council meeting in Oslo in 1975.

In September 1975, UNESCO organized an intergovernmental conference on planning of national documentation and library and archive infrastructures. The recommendations will have fundamental significance for the future development of national library activity.

As a result, under the impact of present-day demands and the effect of progressive library ideas, the old national libraries are gradually beginning to reorganize their activities: coordinating acquisition of materials with other libraries in the country, democratizing the rules of admittance of the public, participating in inter-library loan, developing other forms of library collaboration.

The most interesting and striking example of this process is the creation in Great Britain of the new national library based on the former British Museum Library.

Projects of other newly created national libraries are also being worked out in accordance with the new trends.

As a result, the national library as a type is being modernized and its concept and typological indications are changing, along with that of other libraries. In determining the concept of the national library, it is now necessary to take as a basis, not just one kind of function, but a whole combination of them and to examine the national library simultaneously, as both a constituent part of the whole library system of the country and the complete system itself, all parts of which are interconnected and interdependent.

In 1963, at the conference of the Section of University and National Libraries of Great Britain, the director of the State and University Library in Aarhus, Ib Magnussen, named seven basic functions of the modern national library:

1. collection of national literature
2. collection of foreign literature
3. collection and storage of rare and especially valuable editions
4. providing reader access to collections
5. providing information-bibliographic service
6. training library personnel
7. participation in planning of the country's library service

In the mid-1960s, much fruitful work was conducted in this field within IFLA by the British librarian K. W. Humphries. As a result of a comparative study of activity of the largest national libraries of the world—the British Museum Library, the Library of Congress, the Lenin State Library, and the National Library in Paris, K. W. Humphries divided all functions carried out by all these libraries into required, desirable, and optional categories. Among the required functions, he mentioned collection of literature published in the country, as complete as possible; storage of the deposit copy of national publications; collection of foreign literature; publication of national bibliography; planning and coordination of bibliographic

information carried out in the country; and planning a retrospective national bibliography. In the desirable functions, he placed: participation in interlibrary loan, collecting manuscript materials, and conducting research in librarianship. Under optional functions, he placed: organization of international and national book exchange, collecting literature for the blind, training library personnel, and methodological aid to libraries of the country.

In the report of the regional seminar on the development of national libraries in Asia and the Pacific area (1964), it was indicated that the national library should:

1. provide leadership among the nation's libraries
2. serve as a permanent depository of all publications issued in the country
3. acquire other types of material
4. provide bibliographical services
5. serve as coordinating center for cooperative activities
6. provide service to government

As a result of Soviet experience and the experience of the national libraries of other socialist countries, the director of the Lenin State Library, I. P. Kondakov, indicated the following four functions, the sum total of which in his estimation defines the modern concept of the national library. They are the functions of national book depository, the largest public library, the bibliographic center, and the methodological and research center.

In 1970, UNESCO, in its *Recommendations Concerning the International Standardization of Library Statistics* adopted by the general conference at its 16th session, offered the following definition of the national library:

> *National libraries:* libraries which, irrespective of their title, are responsible for acquiring and conserving copies of all significant publications published in the country and functioning as a "deposit" library, either by law or under other arrangements. They will also normally perform some of the following functions: produce a national bibliography; hold and keep up to date a large and representative collection of foreign literature including books about the country; act as a national bibliographical information centre; compile union catalogues; publish the retrospective national bibliography. Libraries which may be called "national" but whose functions do not correspond to the above definition should not be placed in the "national libraries" category.

Participants in the conference of experts on national planning of documentation and library service in Africa (1970) formulated the following basic functions of the national library:

1. to serve as the primary instrument for the achievement of coordinated library development
2. to serve as a permanent depository for all publications issued in the country and to collect printed material concerning the country wherever published
3. to publish the National Bibliography
4. to organize the national and international exchange of publications and information

Despite the differences in the formulations given above, they share in comprehending and interpreting the basic distinctions of the present-day national library, namely: They all consider the national library as the chief depository of printed output of a country; as an information–bibliographic center; and as a center for the whole country's library system, coordinating and directing the various forms of activity of the other libraries of the country. Let us examine each of the three components named.

The primary and most important task of the national library is collection and storage of a country's printed output. At present, the growth in volume of printed output has complicated the accomplishment of this task, particularly in countries with highly developed publishing industries.

Even in 1958, considering these circumstances, the participants of the Vienna Symposium on National Libraries in Europe came to the conclusion that the national library should not, without exception, collect and store all the printed output of its own country and should share the responsibility for completeness of acquisition of national publications with one or several other libraries. A similar solution, in the opinion of symposium participants, can apply to materials of ephemeral significance.

The largest national libraries, like the Library of Congress, the Lenin State Library, the British Library, and the National Library in Paris, are already taking this path in dealing with certain types of publications (e.g., small print materials, leaflets, postcards, etc.).

At the same time a definite trend has been seen toward expanding the volume of acquisition by new types of national materials. For example, the Lenin State Library and a number of other national libraries collect dissertations; the Library of Congress collects research reports. In Hungary, Poland, and France, the depository copy is required for phonorecords. Many libraries have available large holdings of microfilms. As long as these and similar new forms of recording knowledge and transferring information acquire greater significance, the national library cannot ignore them. The traditional definition of a unit of acquisition as a "printed publication" has begun to become obsolete and requires other criteria to be worked out, the basis of which would not be form but rather the value of a materialized means of transferring knowledge.

This outlook is fraught with difficulties which are indeed incredible and which may be overcome only by introducing important changes in the established order. A prerequisite for this is the fact that in many countries, not only the national library but many other research libraries are provided with the deposit copy. As a result a base is created for developing a whole system of general national libraries (for example, in the U.S.S.R., the M. E. Saltykov-Shchedrin State Public Library and the state libraries of the Union Republics belong to this system; in Great Britain, the National Libraries of Wales and Scotland)—as well as special (the medical and agricultural libraries of the U.S.A.; the central scientific technical, agricultural, and medical libraries in the U.S.S.R., which are in substance, although not in status, the national special libraries).

As far as quantitative growth of printed works and other means of recording knowledge are concerned, the national libraries are gradually being obliged to relinquish not only editions of ephemeral value, but also some materials in less demand, which have mainly a regional or limited interest because of language difficulties, narrowness of subject, etc., and to transfer the depository functions for these materials to other libraries.

But, the following principles should be strictly observed:

First of all, decentralization of collections of the national library cannot by any means apply to the basic core and should not disturb its integrity. Subject to decentralized storage are publications representing more or less independent structural sections of the collection (e.g., patents). In the second place, decentralization should not encroach on the general nature of the national library collection with regard to content. Third, it is necessary to maintain the exhaustiveness of acquisition and thoroughness of storage of the part of the collection detached from the total collections of the national library. In the fourth place, the national library is obliged to have complete information about the content and growth of this "branch" of its own collection. In the fifth place, the "branch" should be accessible; conditions should be created for its use on the spot, by interlibrary loan, with the aid of reprography, etc.

This decentralization of depository function, however, will not disturb the nature of the national library as such, in terms of its basic typological features—only under conditions of subsequent strengthening of its information function.

As far as the traditionally unique value of the national library, that consists, first of all, of a completeness of national collection; the value of the reference apparatus, which should contain exhaustive summary information on the holdings of all national printing, grows with partial decentralization of this collection. Thus, in conditions of harmonious and interrelated development of both functions, the role of the national library in collecting and using national literature and means for solving given problems will be changing somewhat. But its value in serving science and culture is by no means decreased.

The question about the role and problems of the national library in the field of information was first raised at the International Conference on the Improvement of Bibliographical Services held in Paris in 1950. The conference recommended the creation of a National Bibliographical Information Center in each country which will serve:

> As the recognized center to which all requests, not met elsewhere, for bibliographical information regarding the books and other recorded materials of its own and other countries should be addressed.
>
> To put enquirers, when necessary, into touch with specialized sources of bibliographical information.
>
> To centralize requests for information from abroad and from international organizations.

In the opinion of conference participants, it would be more logical to maintain

such a center at or in close association with the national library, since a ready basis for this service is available in this institution. The deposit copy of the national printed output and the national union catalog were considered under this base.

The deposit copy provides the foundation for developing information, current and retrospective, on national printed output; the union catalog contains information on the content and geographic distribution of national library holdings as a whole. These two sources, in their totality, create a solid base for the diverse forms of bibliographical information on literature available in the country and for the development of library cooperation.

The richest information base, of which the national library disposes in the form of the deposit copy, has for a long time stimulated the development of bibliographic forms of its activity. Most important of them is the current registration of national printed works, the so-called current national bibliography. It was first conceived more than a century and a half ago (1811) in France as the current registration of new books entering the National Library in Paris according to the legal deposit act, and is presently an indispensable function of most of the national libraries in the world.

There are only a few countries where the national libraries do not participate in compiling current national bibliography: In these cases special institutions prepare the bibliography and obtain for this purpose a deposit copy of the printed output of the country (as for example, in the U.S.S.R. and Yugoslavia). The problems of publishing the current national bibliography were the subject of discussion at a number of international conferences of librarians: the Vienna Symposium, the seminar on questions of the development of national libraries in Asia and the Pacific area, and the 31st session of IFLA.

Equally as serious a problem as the current national bibliography is the centralized recording of all library holdings of a country, as well as information about it, implemented in the form of union catalogs. This is a relatively recent but traditional function of the national library. The national union catalog was first organized in 1901 in the U.S.A., but achieved wide acceptance later, in the 1920s and 1930s.

Since the deposit copy of national literature comes into most national libraries, their catalogs completely reflect this literature. The national union catalog in this case takes into account only foreign publications (this is the situation, for example, in France). In countries where there is no system of a deposit copy (e.g., U.S.A.), the national union catalog covers both national and foreign printed materials.

The development of interlibrary communication, the coordination of the basic aspects of library operations, in other words, anything that predetermines a unified library system is inconceivable without national union catalogs. Therefore, greater importance is being attached now to the question of their creation and the national library's active role toward this end.

The role of the national library as a national information center, however, is not limited to this. In recent years, its coordinating function in the area of reference and bibliographic service has developed ever-increasingly. It is possible to consider 1951 as the beginning of this new trend in national library activity, when the Na-

tional Library of Poland undertook to coordinate the operation of the bibliographic institutions in the country, both the general and the specialized ones. As early as 1952 it began to publish *A Subject Index of the Most Important Bibliographic Lists, Compiled by Libraries and Scientific Organizations.*

Later the national libraries of other socialist countries began carrying out similar work.

In 1962, still another new form of activity for the national library was begun when the National Referral Center for Science and Technology developed in the Library of Congress, whose task it was to establish links between the consumers of information and those sources where it could be found, i.e., between the users and the libraries, information centers, research institutions, and even individual specialists.

Thus, the reference apparatus of the national library is gradually becoming the key to the entire library holdings of the country. This tendency is an inherent and most important feature of the general trend toward conversion of the national library to the center of the united library system of the country.

Depending on the specific conditions of one or another country, the coordinating and leading role of the national library in the total library system is revealed in various forms: in centralized planning of library service development, in maintaining unity of library methods, in responsibility for training librarians, in organizing research studies in librarianship, etc. With all this diversity of forms, the essence of the function of the national library is to be the center of the library system of the country, its heart, the most important mechanism furthering the development and improvement of library service.

The character of the present-day national library would be incomplete, however, if there were not added one more function to the three already examined, which specifically determines its role and position in direct library service. It was mentioned by Ib Magnussen and more clearly formulated by I. Kondakov as the function of the largest public library in the country. It can be said on the face of it that this function is not a typological characteristic of the national library only. However— in reality—the total accessibility of national library holdings is the inherent feature which distinguishes the present image of the national library.

In the long-term program of IFLA, "Libraries in the World," it is said:

> One of the more important distinctions of the present research libraries from similar libraries of the past century, is apparently the fact that the expedient use of their collection has the same if not more important significance than the value of the collection itself.

This idea may pertain even more importantly to national libraries than to libraries with the richest collections.

At the Symposium on National Libraries in 1958, in Vienna, the unanimous opinion was expressed that the modern national library cannot be considered as carrying out its functions completely if it does not provide the proper level of

library service and quick and easy access to its collection. Furthermore, it was agreed by the symposium participants that the national library can really occupy a central position in the library system of its country only if it will itself carry out reader service at the highest level and gain the respect and confidence of users.

The basic problem of reader service in the national library is formulated in recommendations of the Viennese symposium, as "providing more complete scientific use of its holdings."

The Lenin State Library became the first, available free-to-all, national library in the fullest and broadest sense of the word. In conformity with its practice, the term "availability to all" signifies not only unlimited right to read in the library, but the whole system of forms and methods of service, furthering more complete use of collections, such as: longest possible hours of operation of the library; participation in interlibrary loan; reproduction service; thorough exposure of content of collections through catalogs, exhibitions, information tools, etc. This principle was also established as a basis for service by libraries of other socialist countries.

The Library of Congress became a general access institution long before the old European libraries—any adult can use its reader services. However, it provides to a broad spectrum of readers all forms of service only to that degree where fulfillment of its main function in not interfered with—that of service to members of Congress.

As was mentioned above, the question of public use of the collection also came up before other national libraries, as a great number of people over a period of decades were involved in the active, constructive activity. The democratization of rules of use of the national library has been observed in all countries and on all continents, its hours of operation are being extended, participation in interlibrary loan is being promoted, a considerable number of libraries also provide individual loan service. However, the very fact that most national libraries obtain only one deposit copy hampers the development of the last two forms of service mentioned.

Attaching great significance to the role of loan in reader service, the 31st session of IFLA expressed the desire that national libraries would be provided with no less than two deposit copies. However, this is still not being realized; only a few libraries receive more than one deposit copy, in the first instance, in socialist countries.

Resulting from a comparative analysis of present opinions and taking into account the actual activity and trends of national library development, it is possible to single out the following four main typological functions: state depository of national printed works; the largest public library of the country; the bibliographic center; the central library of the entire national library system of the country.

These functions determine the type of holdings, the scale and trend of their use, as well as the role of the national library in organizing the library service of the country. They are integrally interconnected and interdependent. The exclusion of one of them causes the library to stop functioning as a national one. A change by any of them inevitably is reflected in the state and development of the other.

For example, the function of the largest public library of the country is most closely connected with the function of national depository, since reader service should be based on active use of the collection. Simultaneously, the collection of the library is the basis of its information and bibliographical activity. In turn, without the bibliographic information service it is impossible to coordinate operations of libraries, since the main condition for coordination is reciprocal information carried out with the aid of union catalogs, information indexes, plans, etc. Furthermore, coordination assumes not only distribution of responsibility and mutual information, but also agreement on method and principles, a minimum level of professional training of personnel, and sharing of experience, etc.

All the functions named are not equally developed in all the present national libraries, and the forms they are taking are not identical since they are determined by those specific historical traditions and social conditions in which one or another library was developed and now functions. Nevertheless, one of the characteristic features of the present stage of development of the national library has been the tendency of these functions to develop into an integral whole.

Based on everything mentioned above, the following definition of the national library as a standard concept is proposed:

> A library is called a national one when it is the official depository of printed works; a general access library; an information–bibliographical center; and a center of coordination, planning, and stimulation of the entire library system of the nation.

As has already been discussed above, the practices of the four largest national libraries of the world—the American, English, Russian, and French—have exerted and are exerting a significant influence on the formation of the national library as a standard concept. In their functions and direction of activity, they differ very much from one another, providing cause for constant discussions as to which of them most completely meets the requirements presented today to this type of library.

The National Library in Paris is a universally recognized "greatgrandmother" of the type. It was founded as the Royal Library in 1480 and has received deposit copies, with some interruption, since 1537. In 1795, it was declared the national library of the country by the National Convention. The approximate quantity of its holdings is 20 million storage units. These include about 8 million books and pamphlets, over 500,000 titles of periodicals, 800,000 maps, 12 million prints and photographs, 180,000 manuscripts, and 400,000 coins and medals. The annual increase in its collections is 100,000 storage units.

It is a general type of library with some emphasis on the humanities in the area of foreign acquisition; main attention is given to monographs of a general nature in all branches of knowledge and to more specialized publications in literature and history of art.

The library is a general access one, its readers may be people who have completed higher education programs, or have an application from the administration of a scientific institution. The reading rooms are organized chiefly by kinds of

materials. The literature from the collection is also available for interlibrary loan.

The library conducts broad information–bibliographic activity. It publishes *The General Catalog of National Library Publications* and *Inventory of French Collections of Prints*, participates in compiling the French National Bibliography and union catalogs, and publishes the monthly information on new accessions—*Bulletin of French Libraries.*

It is the center of library–bibliographic work of the country, conducts research in documentation and processing of books, and works on improving administrative processes by libraries (service, storage, acquisition, loan).

In 1967, an information center on automation was created in the library. It collects material on the application of computer methods in libraries and on documentation in the humanities, and also trains library employees in computer programming.

The British Museum Library was the national library of Great Britain up to 1973. It was founded in 1753 and in 1970 housed over 7,000,000 publications and 200,000 storage units of manuscripts in European languages, 250,000 printed books and 38,000 manuscripts in Oriental languages, 500,000 geographic maps and approximately 1,000,000 scores of printed music. Also a part of the institution was the National Reference Library for Science and Inventions, subscribing to approximately 20,000 scientific and technical journals and having over 11 million patent units. There were Egyptian, Greek, and Roman papyri and over 10,000 incunabula in its holdings.

The library participated in issuing the current national bibliography and published a printed catalog of its holdings, the last edition of which (1964) contained 263 volumes with supplements. During the last five decades, the activity of the British Museum Library as a national library of the country has undergone constant criticism from English librarians for its conservatism, which manifested itself in use of holdings and isolation from other libraries in the country. In 1967, the government of the country, under pressure of public opinion, formed a special committee on national libraries which developed a project on the basis of which the new national library was opened to the public in April of 1973.

It was organized on the basis of the five previously existing library institutions— the British Museum Library, the National Central Library, the National Lending Library for Science and Technology, the British National Bibliography, and the Office of Scientific and Technical Information—and is called the British Library.

Its main functions according to legislation adopted in 1972 are storing and providing for use in the reading rooms a complete (no less than one copy) set of national publications and as complete as possible collection of foreign literature for use in reading rooms; organizing effective central loan as well as photocopy services; and maintaining centralized cataloging, collaboration, and cooperation with national and foreign research libraries.

In addition, it should become the leading scientific research library center and lead to work in training and improving the qualifications of library personnel.

For the time being, the new library is taking only the first steps. Complete introduction into the operation of all its components and functions is tied into completion of a new building, projected for 1984. However, it is obvious even now that this library, developed on the basis of IFLA recommendations, with a broad application of achievements in library theory and practice, represents one of the most important advents in modern library life.

Its most typical feature, assuming an integral connection with the entire national library system, is efficiency of interaction with each of the components of this system, in which the British Library itself should occupy a key position, to a great extent predetermining the effectiveness and economy of its operation as a whole.

The U.S. national library—the Library of Congress—was established in 1800 by special order of Congress for service of Congressmen.

Its holdings consist of 14,500,000 books and pamphlets; 132,000 bound volumes of newspapers; over 29,000,000 storage units of manuscript materials; 3,300,000 pieces of music prints; over 3,000,000 maps; and a large number of other materials, including films, records, tapes, microfilms, etc. Annual increase in holdings is from 1,000,000 to 3,000,000 storage units.

The library has over 55,000 incunabula, collections of rare American prints (60,000 volumes), book collections of Thomas Jefferson and many other U.S. presidents, collections of Chinese (330,000 volumes) and Japanese (450,000 volumes) literature, and the largest (outside of the U.S.S.R.) collection of publications in Russian.

The Library of Congress is guided in its acquisition policy by two, it would seem, mutually exclusive principles—exhaustiveness and selectivity. However, as distinguished from other national libraries, the principle of exhaustiveness is applied not to acquisition of national publications, but to foreign literature (which is three times more than national acquisition), in all languages and almost without subject limitations (with the exception of medical and agricultural literature, which is collected by the National Library of Medicine and the National Library of Agriculture).

"Americana," reference–bibliographical editions, and legal literature are collected with particular thoroughness.

In national acquisitions, the Library of Congress is guided by the principle of selectiveness: It does not take textbooks for high schools; it stores only certain samples of paperbacks; it has only 300 American newspapers, and those are in microfilm only; as well as dissertations. Thus, the library carries out its main function—collection and storage of a complete repertoire of the national printed publications—to a limited extent.

Any adult can be a library user. However, having been created originally for the exclusive service of members of Congress, it is first of all a government library, giving its attention to the general user only to that degree to which it is not prevented from performing the primary task—service to Congress, which accounts for no less than two-thirds of the volume of service work. There are 18 reading rooms

with space for 1,460 readers. Most of the rooms are specialized by subject areas, types of publications, and languages. Its interlibrary loan service is used by 2,190 U.S. libraries.

The information–bibliographical functions of the Library of Congress are broadly developed: It publishes and distributes printed cards; carries out catalogings in source; and publishes a union catalog of new additions to the collections of American and Canadian libraries and a union catalog of publications from the beginning of book printing up to 1956.

The library coordinates its activity with other libraries in the area of acquisitions, participating in the Farmington Plan, and distributes among the American libraries publications obtained by the so-called Public Law 480.

It is also the center of research in librarianship and bibliography, giving special attention to problems of safety of book holdings and automation of processing operations (the "MARC" project). It also administers a national program of service to the blind and other physically handicapped people.

There are 3,890 people on the staff of the library.

The Library of Congress has great influence on the reorganization of work of the old European libraries in relation to modern requirements. It will be recalled that the Viennese Symposium on National Libraries in Europe, which has outlined the main course of modern national library development, was to a great degree inspired by the experience of the Library of Congress. The MARC project which it developed has created widely accepted international standards in this area and gained the cooperation of national libraries on an international basis.

The Lenin State Library of the U.S.S.R., the national library of the Soviet Union, was founded in 1862 as a constituent of the Moscow Public Rumiantsev Museum. From the moment of its conception it began to obtain deposit copies of national publications. In February 1925, it was changed into the national library of the country and given its present name.

The library holdings include 11.7 million books; 10.1 million journal issues; 387,000 annual sets of newspapers in 200 languages of all nations of the world, including 89 languages of U.S.S.R. nations; 330,000 storage units of manuscripts; 1.3 million units of maps, prints, and printed music; 616,000 units of special forms of technical literature; and 459,000 microfilm rolls. The annual stock increase is approximately 700,000 storage units.

The library has available the most complete collection of national publications and the largest collection of foreign publications in the U.S.S.R. In its holdings there are manuscripts from the 6th to the 20th century, including the richest collection of old-Russian manuscript books as well as manuscripts of writers and academic and public workers. There are books from the 15th to the 18th century in the rare books division, as well as first editions from the lifetimes of K. Marx, F. Engels, V. I. Lenin, and Russian and foreign classics of science and literature.

All adult citizens can use the library. It has 22 reading rooms with 2,500 seats for readers, most of which are specialized: five by fields of knowledge, and the remaining by types of publications. Over 5,000 libraries in the country access its collection through interlibrary loan.

The information–bibliographic service is widely developed, carried out in the form of oral and written bibliographic references and consultations on using information bibliographic sources and the history of the book and library work. The library publishes the *Information Bulletin of New Foreign Acquisitions* and printed cards on new foreign books as well as on the deposit copy of maps, printed music, and on foreign books from the 16th and 17th centuries. Published regularly are indexes and lists of literature on various topics in science, culture, and art; also, union catalogs and printed catalogs on individual parts of its own collections.

Collaboration is broadly developed with other libraries of the country also in other fields, i.e., the Lenin State Library is the leading research institution of the country in librarianship, bibliography, and history of books, and coordinates the research of the largest libraries in this field. It is also the center of recommendatory bibliography and the methodological and consultation center for all Soviet libraries other than scientific–technical libraries.

There are 2,600 people on the library staff.

While the youngest of the four national library giants, it serves as a model for the development of national libraries of the other socialist nations. In comparison with the libraries of bourgeois countries, this group of national libraries has certain specific distinguishing features, of which two are most characteristic: One is the active position in relation to the public, expressing itself in the scope of service operations and in breadth and diversity of forms of exposing holdings through exhibitions, indexes, open access to shelves, etc. (In a year, approximately 2.5 million people visit the Lenin Library; weekly attendance is from five to eight thousand; it answers over 150,000 written and oral bibliographic requests in a year.)

The second feature is the wide development of diverse forms of assistance to other libraries of the country by developing methodological manuals, organizing conferences on the exchange of experiences, compiling recommendatory lists of literature, etc. The meeting of directors of methodological divisions of the national libraries of socialist countries, organized regularly since 1965, promotes considerably the development and strengthening of this form of work.

The past years of national library development reveal some new trends. One of them is the creation of complex national libraries based on the amalgamation of several existing ones. Such a solution to the problem took place in Prague in 1959 where the national library—the CSSR State Library—was organized by means of an administrative joining of four of the largest research libraries in Prague: the National, University, Slavic, and Central Economic Libraries. In 1970, the Bulgarian national library—the Cyril and Methodius National Library—together with the five other central research libraries (the Academic, Technical, Agricultural, Medical, and University Libraries), formed administratively a single entity. (The directors of these libraries, remaining under the authority of respective ministries, are at the same time deputies to the director of the Cyril and Methodius People's Library.) The British Library, described earlier, is created on this same principle. It may be assumed that this trend will attain further development in the next years since it is an efficient administrative form which permits, with great consistency

and completeness, realization of the task of creating a single national system of library service.

The second trend concerns international cooperation of national libraries. During the past decades it has been carried out, strengthened, and broadened very successfully. The international unification of the most important library procedures, the development of international rules for cataloging and bibliographic entry, universal decimal classification, international book number, and the successful development of automation in libraries all paved the way for the solution of very complex problems such as the development of specialized international information systems (e.g., UNISIST) and universal bibliographic control. A new step in this direction, which began in 1974, is the international development of common national documentation library and archive systems (NATIS). In all these undertakings the national libraries have participated most actively. This leads to the strengthening not only of their role in the library system of the country, but also of international cooperation among them.

The development of this aspect of activity of national libraries signifies that some new "common system" is gradually beginning to be formed in the world—an international system of national libraries. Of course, the bonds between their elements are "looser" and the whole process of development of this system is much more complex and prolonged than those processes occurring on the national basis, but this trend is evident and indisputable.

Thus, the national library as a standard concept to date should be considered simultaneously from three aspects: as a library "microsystem" by itself; as a component part of the library system of the country; and, in its interaction with national libraries of other countries, as an element of the new international system being formed.

The literature on national libraries is quite extensive. However, most of the works are practical and descriptive in nature. The interesting path followed by national libraries, and reflected in these works, still awaits serious theoretical summarization.

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Translated from the Russian by
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NATIONAL LIBRARIES TASK FORCE

The National Libraries Task Force (its full name is the U.S. National Libraries Task Force on Cooperative Activities) was established in 1967 by the three national libraries—the Library of Congress, the National Agricultural Library, and the National Library of Medicine. In varying stages of progress in their individual automation programs, the directors recognized their need for cooperative advice

from the staff of the three institutions on the steps that should be taken to achieve a coordinated national library automation effort aimed at speeding the flow of research information to the nation's libraries and the scholars who use them. This effort to achieve systems compatibility at the national level has far-reaching implications for library automation and library systems of the future.

The directors designated as the broad purpose of the National Libraries Task Force's work, improvement of

> access to the world's literature in all areas of human concern and scholarship, so that comprehensive access to the materials of learning can be afforded to all citizens of the United States.

Goals identified at the beginning by the three national libraries were the development of a national data bank of machine-readable bibliographic information capable of being serviced to other libraries and the achievement of the highest degree of compatibility possible in all technical aspects of librarianship. The Task Force was the vehicle established to guide this cooperative undertaking.

The Task Force (composed of two members from each of the three national libraries) identified specific problem areas requiring detailed study and named working groups to examine these matters in depth. Initially, 10 working groups were active in the following areas: acquisitions, bibliographic codes, character sets, descriptive cataloging, generalized output, machine-readable format, name entry and authority file, serials, subject headings, and systems. Each group was chaired by a national library staff member knowledgeable in the problem area concerned and the memberships were composed of staff having responsibilities in the pertinent fields in their respective institutions.

More recently the working groups were reorganized into five areas: acquisitions, descriptive cataloging, machine-readable data format, subject headings, and telecommunications.

Recent products and accomplishments resulting from the Task Force's program are:

> Preparation of guidelines for participation in the cooperative program
>
> Automation seminars at each of the three national libraries to facilitate the exchange of information on automation systems development and to share experience in this area
>
> Review of subscription dealer performance, including the services libraries should expect to receive from subscription agents
>
> Initiation of study on the use of a standard order form by libraries
>
> Examination of possible design of a standard book order format and an identification code for book orders
>
> Summary of the acquisitions responsibilities of the national libraries
>
> Summary of cooperative agreements and arrangements among the three national libraries
>
> Cooperation with the Federal Library Committee in organizing an experimental automated Federal Libraries Experimental Cooperative Cataloging Project
>
> Study of advantages and disadvantages of centralized storage facilities for use by federal libraries

Preservation surveys in the national libraries
Examination of cooperative lending on a regional basis
Consultation on a national serials data project
Consideration of centralized procurement
Consideration of proposals for a national bibliographic search and retrieval system

Earlier achievements include:

Joint adoption by the national libraries of the machine-readable cataloging format
(MARC II) for the communication of bibliographic information and the set of
data elements for monographs within the MARC structure
Implementation of the National Serials Data Project
Achievement of compatibility in descriptive cataloging
Development of comparative table of acquisitions policies
Identification of common data elements for automation of acquisitions procedures
Identification and comparison of objectives, collections, services, clientele, and
requirements of the three national libraries
Consideration of common data elements in authority lists
Subject headings analysis
Development of standard calendar date code, standard language code, standard
character set
Staffing requirements in national libraries systems development

A significant accomplishment in the total Task Force effort is the opportunity
this program affords for the bringing together under one umbrella of the collective
view and experience of staff members directly and intimately involved in the tech-
nical library operations in the three institutions. The reporting of difficulties encoun-
tered in the pursuit of mechanized solutions to library processes, as well as the
sharing of successes in these initial breakthroughs in complex library automation
explorations, have contributed to the progress realized in systems development in
the three national libraries.

The National Libraries Task Force's program recognizes the unique responsi-
bilities of each library for the collection and dissemination of materials in all lan-
guages, in all forms, from all parts of the world. The National Agricultural Library
has this responsibility for agriculture and its allied fields; the National Library of
Medicine for the preclinical sciences and for medicine and related fields; the Library
of Congress' responsibilities extend to all fields of knowledge, with cooperative
acquisitions arrangements deferring to the other two libraries in their respective
areas of responsibility.

The clientele served by each of the three libraries is similar, with the Library of
Congress having special responsibilities to the Congress, the National Agricultural
Library to the agricultural community, and the National Library of Medicine to
the broad medical field. All serve the general public, although other users may
have higher priorities. Each serves other federal agencies, and each has responsi-
bilities and cooperative arrangements with other libraries, federal and nonfederal.
All have international as well as national service responsibilities.

Services provided by each of the three national libraries include use of the col-
lections on the premises, interlibrary loan, reference, bibliographic services, publi-

cations, and photocopying; and each library provides special services related to the needs of its particular clientele.

The common purposes and programs of the national libraries confirm the desirability of continuing to collaborate, particularly in the area of systems refinement, and to work toward ultimate recognition of the fact that the national libraries of the United States are necessarily the pivot of a true national information system.

The Task Force's concentration on development of standards for the inputting, transmission, and dissemination of information in machine-readable form is basic to the progress achieved to date in the application of automated techniques to library processes on a national scale. Agreement on the MARC communications format, brought about through the Task Force's program, is a positive demonstration of the three national libraries' intention, working through the National Libraries Task Force, to extend the usefulness of their collections and services through the application of new technological capabilities wherever economically and technically feasible. The ultimate goal is to use this cooperative mechanism to facilitate further extensions of library service throughout the national and international information and research communities.

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THE NATIONAL LIBRARY OF MEDICINE

Introduction and History*

The National Library of Medicine (NLM) is located just outside Washington, D.C., in Bethesda, Maryland. It stands on the grounds of and is a part of the National Institutes of Health, U.S. Department of Health, Education, and Welfare (HEW). One of three national libraries in the United States (with the Library of Congress and the National Agricultural Library), the National Library of Medicine is the world's largest research library in a single scientific field.

A board of regents advises the HEW Secretary on matters of policy affecting the library. Ten regents, drawn from the health and library professions, are nominated by the President for 4-year terms, with confirmation by the U.S. Senate. In addition to the 10 appointed members, there are seven ex-officio members who are high-ranking federal officials in related fields, including the Surgeons General of the Army, Navy, Air Force, and Public Health Service.

The library collects materials exhaustively in some 40 biomedical areas and, to a lesser degree, in such related subjects as general chemistry, physics, zoology, botany, psychology, and instrumentation. The holdings include over 1½ million

* The Bibliography for this section begins on page 137.

books, journals, technical reports, documents, theses, pamphlets, microfilms, and pictorial and audiovisual materials. More than 70 languages are represented in the collection. See also the statistical profile given in Table 1.

HISTORY

The National Library of Medicine had its origin with a collection of books in the office of the Surgeon General, Joseph Lovell. Lovell was Surgeon General in the Medical Department of the Army from 1818 to 1836. The first request for funds for the library—$150 for medical books—appeared in the 1836 estimate of expenses for the Surgeon General's Office, and in 1840 the office issued its first "catalogue of books in the Library." This was a manuscript catalog and listed 130 titles. By the time the Surgeon General's Office produced its first published catalog, in 1864, the library's collection had grown to 1,365 volumes.

The year 1865, when John Shaw Billings assumed charge of the collection, marked a turning point in the development of the library. Under the direction of Dr. Billings, and with the support of Surgeon General Joseph K. Barnes, its holdings increased considerably. Within 6 years the library had 13,000 volumes, and by 1873 the collection included 25,000 books and 15,000 pamphlets. By 1880 the number of books had doubled to 50,000 and the number of pamphlets had quadrupled to 60,000 items. Within that decade books and journals were regularly going out on loan to physicians, and thousands of reference inquiries were being answered annually.

Just as important as the increase in the collection was the publication of reference and bibliographical works inaugurated by Billings. In 1879 there appeared the first issue of *Index-Medicus; a Monthly Classified Record of the Current Medical Literature of the World*, compiled under the supervision of Billings and his assistant Dr. Robert Fletcher. The following year Volume 1 of the *Index-Catalogue of the Library of the Surgeon General's Office* was published. This project was a combined author and subject listing of monographs and periodical literature in the library. Fifteen years later, in 1895, Volume 16 appeared, thus concluding the first

TABLE 1

Statistical Profile of the NLM*

Employees: 458
Appropriation: $28,450,000
Collection (book and nonbook material): 1,481,889
References queries: 31,286
Users registered: 22,426
Circulation (including interlibrary loan): 218,867
Articles indexed: 220,800
On-line computer searches: 402,058

*Figures for the year ending June 30, 1975.

series of the *Index-Catalogue*. The work contained a total of 176,364 author and 168,557 subject entries for books and pamphlets, as well as subject entries for 511,112 journal articles. William Welch, Professor of Pathology at the Johns Hopkins Medical School, claimed that the *Index-Catalogue* was one of America's greatest contributions to 19th-century medicine. The holdings of the library in 1895—the year Billings retired—included 116,847 books and 191,598 pamphlets.

The active acquisitions program was continued after Billings left. Similarly, the publication of reference aids and bibliographical guides to medical literature remained a primary objective of the library. From 1903 to 1927 the library produced the second and the third series of the *Index-Medicus*, published under the patronage of the Carnegie Foundation. In 1927, the *Index-Medicus* merged with the *Quarterly Cumulative Index* to become the *Quarterly Cumulative Index Medicus*. This was published through 1931 under joint sponsorship of the library and the American Medical Association (AMA), and from 1931 to 1956 by the AMA. The *Current List of Medical Literature* was published from 1941 until 1959, and in 1948 the library published its *Army Medical Library Classification*. Shortly thereafter, in 1950, the library issued its first annual catalog: the *Army Medical Library Author Catalog, 1949*. Also, in 1950, the library decided to terminate publication of the *Index-Catalogue of the Library of the Surgeon General's Office;* the methodology of the late 19th century proved inadequate for the repository's bibliographical problems in the mid-20th century. The current publications of the NLM are listed in Table 2.

When Billings assumed charge of the library it was housed in the Riggs Bank building in Washington. In 1866 the collection was transferred to the Ford's Theater. These facilities, however, were also woefully inadequate and, in 1885, President Chester A. Arthur approved plans for a new library building, designed by Billings. Two years later, in 1887, the library and the Army Medical Museum

TABLE 2

NLM Publications[a]

Index Medicus (monthly, with annual cumulation)
Abridged Index Medicus (monthly, with annual cumulation)
Monthly Bibliography of Medical Reviews
Current Bibliography of Epidemiology (monthly, with annual cumulation)
Toxicity Bibliography (quarterly)
Current Catalog (quarterly, with annual cumulation)
Index of NLM Serial Titles
Drug Interactions Bibliography (in two volumes)
List of Journals Indexed in Index Medicus (annual)
Medical Subject Headings (annual)
Selected References on Environmental Quality as it Relates to Health (monthly)
Bibliography of the History of Medicine (annual)
A Catalogue of Sixteenth Century Printed Books in the National Library of Medicine
International Bibliography of the History of Legal Medicine

[a] Sold by the Superintendent of Documents, U.S. Government Printing Office.

moved into a newly constructed, three-story, red brick building on the Washington mall. The library remained there until 1962, at which time it moved to new quarters in Bethesda.

The official name of the library, the Library of the Surgeon General's Office, remained in effect until 1922. In that year, it was changed to the Army Medical Library. Thirty years later, in 1952, the Secretary of Defense redesignated the library as the Armed Forces Medical Library, thus making it a joint agency of the three military departments. The last change came in 1956, when the institution officially became the National Library of Medicine and was transferred to the Department of Health, Education, and Welfare.

Efforts to construct a new library to replace the mall structure were made as early as 1938. In that year, in 1940, and in 1941, Congress authorized land, passed bills, and appropriated money for the construction of a new building to house the Army Medical Library and Museum. World War II, however, suspended further action on the project. After the war, in 1949, the Armed Forces Medical Advisory Committee recommended that the library be declared a civil function of the Department of the Army and that a new building be acquired. In 1951 the National Research Council reported to the Secretary of Defense that

> (1) the Army Medical Library should continue to be operated as a National Medical Library under the administration of the Department of Defense; [or] (2) as an alternative, the Army Medical Library should be transferred to the Public Health Service to be operated as a National Medical Library.

In 1953, Secretary of Defense Charles E. Wilson issued a memorandum on the planning, budgeting, design, and construction of a new library building, and the following year the Hoover Commission (Task Force on Federal Medical Services of the Commission on Organization of the Executive Branch of the Government) began hearings on the library. Their report was issued in February 1955 and recommended the creation of a National Library of Medicine and the transfer of the Armed Forces Medical Library thereto. In March 1956, Senators Lister Hill and John F. Kennedy submitted to Congress a bill "to promote the progress of medicine and to advance the national health and welfare by creating a National Library of Medicine." On August 3, 1956, the National Library of Medicine Act was signed into law by President Dwight D. Eisenhower. In April 1962, the library began operation in its new $7-million building. The library's director was Colonel Frank B. Rogers, who had held that position since 1949, and who, in 1964, was succeeded by Martin M. Cummings, M.D.

Previous to Dr. Cummings, all those who headed the library were military men. Following Billings' departure in 1895, the directors were:

> David L. Huntington (1896–1897), James C. Merrill (1898–1902), Walter Reed (1902), Calvin DeWitt (1903–1904), Walter D. McCaw (1904–1913), Champe C. McCulloch (1913–1918), Francis A. Winter (1918–1919), Paul F. Straub (1919), Robert E. Noble (1919–1924), James M. Phalen (1924–1927), Percy M. Ashburn

(1927–1932), Edgar E. Hume (1932–1936), Harold W. Jones (1936–1944), L. L. Gardner (1945–1946), Joseph H. McNinch (1946–1949), and Frank B. Rogers (1949–1963).

HISTORICAL COLLECTIONS

The judicious collecting by Billings of important medical works created the nucleus of the library's rare book and medical history collection. In 1891 Fielding H. Garrison joined the staff and his service and scholarly publications added a dimension to the library's functions within the history of medicine which had not been there previously. In 1913 Garrison published *An Introduction to the History of Medicine* and by 1929 this work had gone through four editions, with several reprintings thereafter. The ongoing collecting of rare books and manuscripts, as well as the acquisition of current monographs and periodicals for over a century, has made the library's holdings in the history of medicine one of the finest research collections in the world.

The earliest medical work in the library is an Arabic manuscript of 1094. The earliest dated printed work is Rabanus Maurus, *De sermonum proprietate,* published in Strasbourg in 1467, and altogether the library owns about 556 incunabula. There are over 5,000 volumes in the library printed in the 16th century, including some 500 added since the publication of *A Catalogue of Sixteenth Century Printed Books in the National Library of Medicine* (1967); and nearly 65,000, including serals and theses, printed in the 17th and 18th centuries. The library holds not only most of the great landmarks of medicine such as William Harvey's *De motu corlis,* 1628, but the many works of lesser men also necessary for historical research, often in several successive editions and translations. Some of the volumes in the collection are the only known copy that survives.

Among the library's historical research collections are the modern manuscript items (dating from 1700). Many of these manuscript collections were acquired over the past century as part of the general collecting of historical materials. However, to help preserve a record of the present and provide sources for future research in the history of medicine, the library has recently embarked on a current manuscripts acquisitions program. These new collections are, at times, supplemented by selected oral history interviews. Totaling over 700 in number, the modern manuscripts collections range in size from single items to collections containing about 100 manuscript boxes. The National Library of Medicine's acquisition of significant manuscript materials, its collecting of rare books and monographs, and its publication of the annual *Bibliography of the History of Medicine* help to give the scholar access to the history of medicine, just as other NLM functions supply bibliographical assistance to physicians for current research and information.

REFERENCE SERVICES

The National Library of Medicine is a "library's library," that is, requests to NLM for services are channeled through existing medical or other libraries which are unable to provide the service. A system of 11 Regional Medical Libraries has

been established to facilitate the servicing of requests throughout the country. Local libraries unable to supply a book or journal article turn to the Regional Medical Library responsible for that geographic area. The Regional Medical Library, if it is unable to fill the request, routes it to another library where the material sought is known to be. The National Library of Medicine, in addition to serving as the Regional Medical Library for the mid-Atlantic area, is the backstop for the entire network.

Not unexpectedly, practicing physicians, researchers, and other members of the medical community make much more frequent use of journal articles than monographs. Over 90% of the interlibrary loan requests filled annually are for journal articles. The increasing availability of Teletypewriter Exchange (TWX) has improved the turnaround time for interlibrary loans through instantaneous transmission of requests, rather than use of the standard American Library Association form sent by mail.

The library is receiving over 225,000 requests each year for interlibrary loans from libraries in the United States and abroad. At present, service to libraries in the United States is provided without charge, while a charge is made for service to libraries abroad. A special arrangement with the Agency for International Development (AID) covers the charges to countries which are parties to the agreement; libraries in the non-AID countries are billed for service.

The NLM also furnishes positive prints, enlargements, reductions, and slide copies of material from the collection for a fee. Much of this work is done by contract outside of the library, using the NLM collection. Requests for this type of service are relatively infrequent, but they do provide authors and educators with illustrative material which may not be available from any other source.

On-Site Services

The Reading Room is reserved for professionals and students whose work in the health sciences requires the use of the library's collection. The library receives over 30,000 reference inquiries annually through the mail, by telephone, and from on-site users. Stacks are closed to the public. Monographs and serials are delivered to the Reading Room for patron use and subsequently returned to the stacks for reshelving. Over 90,000 such requests a year are received.

One area of the Reading Room is given over to audiovisual equipment and media. Videotape players, microfilm and microfiche readers, and audiotape equipment are provided, and a separate catalog gives access to the audiovisual media in the collection. There are three audiovisual rooms with additional audiovisual hardware, one of which serves as a projection room for 8-mm and 16-mm motion pictures. The Reading Room also contains a computer terminal for providing access to the on-line bibliographic search system, MEDLINE.

Micropreservation Program

The deterioration of portions of the collection has prompted the library to initiate a micropreservation program, reducing to microfilm form the materials in its care.

The volume of work has necessitated a two-pronged approach, utilizing outside film contractors and an in-house filming staff. Generally, materials in badly deteriorated condition are filmed in-house in order to eliminate excessive handling and further damage, while the material in more durable condition is sent out for filming.

The NLM has developed rigid standards for microfilming its collection in order to be able to reproduce it in legible film and paper copy form. Much of the material contains extremely small type which can be lost in reducing the material to film format. Over 1,500,000 pages of deteriorating material are filmed annually by contractors. The library maintains a film vault for the storage of silver microfilm master negatives, which is serviced by a separately controlled temperature/humidity system.

TECHNICAL SERVICES

Acquisition

All monographic materials in core medicine and related fields are acquired on a worldwide basis. Blanket orders with book dealers (both here and abroad), purchase orders for specific items, gift, and exchange are all used to acquire approximately 15,000 monographs each year for the library's collection. An on-line in-process file permits computer control of an item from the time of its order until the item is cataloged and announced in the *National Library of Medicine Current Catalog*. A computerized on-line invoice file controls invoices received and payments made, and produces periodic financial reports.

The library acquires about 20,000 serial titles on a regular basis from all over the world (some 110,000 individual journal issues annually). Almost 2,000 new titles are added to the serial collections each year. An automated serials data base, SERLINE (Serials On-Line), contains records for 6,000 substantive serial titles held by over 100 medical libraries in the United States. The library has published the *Index of NLM Serial Titles*, a "key word out of context" (KWOC) approach to the serials file of 20,000 titles.

Cataloging*

The library catalogs approximately 15,000 new titles each year. In addition to the large public card catalog used by staff and patrons, NLM has developed various computerized data bases and a computer-produced book catalog, the *National Library of Medicine Current Catalog*. This catalog provides name and subject approach to monographs, technical reports, audiovisual materials, and new serial titles. The catalog is published quarterly, with an annual cumulation. The *National Library of Medicine Classification* is used to classify materials in core medicine, with the Library of Congress classification schedules used to classify materials in

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* See also E. V. Wiggins, "Catalogs and Cataloging Services," page 138.

fields peripheral to medicine. The *National Library of Medicine Medical Subject Headings* (MeSH) provides a subject approach to all of the materials cataloged.

All of the cataloging data from 1965 to date is in machine-readable form and provides the data base for CATLINE (Catalog On-Line) which permits the bio-medical community computerized, on-line access to NLM's cataloging. For those libraries that want NLM cataloging in card format, arrangements have been made to make NLM catalog cards available for sale through the Xerox Corporation.

To enable the biomedical community to have NLM's most recent cataloging available on a timely basis, the library's *Current Catalog* proof sheets are issued on subscription through the Medical Library Association. The semiweekly proof sheets contain unedited copy of NLM cataloging of English-language material (current imprints and two previous years) completed in the 2 days before publication.

Some of the cataloging announced in the *Current Catalog* is the result of a cooperative cataloging program with several medical research libraries in the United States. Under this program, the participating library which acquires the title first does the original cataloging, and the bibliographic data, with appropriate holding symbol, are entered into the *Current Catalog*. As additional participating libraries acquire the title, the machine-readable record is updated with the additional holding symbols.

NLM participates in a shared cataloging program with the Library of Congress. In England, France, Germany, Scandinavia, Belgium, Italy, and Spain, NLM and the Library of Congress (LC) are using common book dealers. Books selected for NLM are shipped air freight to the Library of Congress. LC identifies and supplies card numbers for those NLM books it wishes to catalog and sends the shipment to the National Library of Medicine. NLM catalogs the books and sends a copy of its cataloging data form to the Library of Congress with the book. Each library does its own cataloging, but the LC card number is added to NLM citations and the NLM classification and subject headings are added to LC citations.

NLM also participates in the Library of Congress Cataloging in Publication program. Under this program, galley proofs of books in the process of being published are supplied by the publishers to the Library of Congress. For those items of medical interest, title page, prefatory matter, and table of contents are forwarded to NLM. NLM catalogs from the material furnished and forwards its cataloging data to the Library of Congress. The Library of Congress supplies the cataloging and NLM subject headings and call numbers to the publisher, who includes the data in printed form on the verso of the title page in the completed product. The NLM cataloging data, at the same time, is announced in the NLM *Current Catalog*.

DEVELOPMENT OF COMPUTERIZED BIBLIOGRAPHIC SERVICES

The explosive growth of the world's medical literature makes it virtually impossible for physicians and scientists to satisfy their information needs without efficient indexing services which lead them to relevant portions of the literature. To cope with this increasing information, the NLM pioneered the first large-scale computer-

based system for biomedical reference storage and retrieval, with the development and implementation of *MED*ical *L*iterature *A*nalysis and *R*etrieval *S*ystem. MEDLARS became operational in January 1964.

Basically, the objectives of MEDLARS as set out by its developers were:

1. To improve the quality of *Index Medicus* by increasing the number of articles and their depth of indexing, while at the same time reducing the time required for its preparation.
2. To produce compilations similar to *Index Medicus* but devoted to specialized subject fields.
3. To allow quick searching of the large computer store of references in response to individual requests.

The first two of these objectives have been met. *Index Medicus*, published monthly with annual cumulations, has grown to almost 1,000 pages per month. Over 200,000 articles are indexed each year from some 2,400 of the world's leading biomedical journals, with an average of 12 subject headings assigned to each article.

Monthly issues of *Index Medicus* are arranged in four sections: In the Bibliography of Medical Reviews subject section and author section, the articles cited represent surveys of recent biomedical literature. In the Index Medicus subject section, each article cited appears printed under several subject headings, which represent the concepts stressed by the authors. The entry appears in full under each subject heading. References in the author section of *Index Medicus* cite the first three authors' names.

The ever-increasing volume of biomedical literature has made it desirable to have judgments and recommendations from consultants as to the number and quality of journals to be included in *Index Medicus*. The NLM is advised by a group of distinguished physicians, scientists, medical editors, and medical librarians. The library indexes the periodical literature that is judged most important by this advisory group. It is not possible to include every journal that the library receives.

The ability of the computer to store large numbers of references, to arrange and rearrange them rapidly, and to produce at high speed pages of references, all formatted and ready for the printer, has made it possible for the library to produce a galaxy of bibliographies, catalogs, and indexes. More than a score of specialty bibliographies in such areas as dentistry, medical education, and nursing are prepared by MEDLARS and printed and distributed by cooperating professional societies and other government agencies. MEDLARS also makes possible the *NLM Current Catalog*.

Because MEDLARS is a man–machine system, its success is directly dependent on the "intellectual input." Such input is provided by several kinds of specialists, including vocabulary specialists and indexers.

Specialists in medical subject headings are responsible for formulating the controlled vocabulary basic to consistent, efficient, and accurate analysis, indexing, and searching of biomedical literature. This controlled vocabulary, known as

"Medical Subject Headings" (McSH), is the dictionary to *Index Medicus* and its related publications. It is the key to retrieving the stored references, and the base for most of the computer programs. Not only does it provide descriptors for indexing and for retrieving references to the biomedical literature stored in the computer, it also provides descriptors which can be used for cataloging books.

The MeSH vocabulary, published annually as Part 2 of the January *Index Medicus*, consists of an alphabetical listing, with cross-references, and a categorical arrangement that places the terms in relationship to other terms representing similar areas and concepts. For example, anatomical terms are listed together; disease terms, in a second category; and drugs and chemicals, in another. There are almost 14,000 terms in the MeSH vocabulary.

The MeSH staff is continually revising and updating the vocabulary. Subject specialists are responsible for areas of the health sciences in which they have knowledge and experience. The specialists collect new terms as they appear in the scientific literature, define them, establish their relationships with other conceptual terms in the vocabulary, and recommend their addition to the subject heading list.

Other specialists engaged in preparing input for the computer are the indexers. Using the "Medical Subject Headings" list as a guide for accuracy, consistency, and specificity, trained indexers assign to each journal article those subject headings which best describe its subject content and ideas. Approximately half of the indexing for MEDLARS is done under agreements with institutions in foreign countries who, in return for the MEDLARS computer tapes, provide indexing input. All indexing input is carefully reviewed at the NLM before it is entered into MEDLARS.

From the beginning the library recognized that the greater the use of the centrally prepared store of citations on magnetic tape, the greater the return to the national health effort. The library, therefore, assisted in the establishment of decentralized MEDLARS centers to afford health professionals greater access to the store of journal article citations.

To obtain a search, a qualified health professional submitted a written request describing the details of the information needed. This request was then "formulated" by a trained analyst, coded into the vocabulary of MEDLARS for input to one of the computers, and processed. Before sending to the requester, the output was reviewed by the same search analyst who had formulated the search.

From 1964 to 1971, 70,000 searches were processed in this manner in the U.S. alone. During this period, one of the biggest problems related to response time. Production of a bibliography and its release to the requester consumed from 2 to 6 weeks. As a result, the library began an intensive effort in 1967 to explore faster methods of response.

In October 1971, the library initiated a nationwide, on-line, bibliographic retrieval system as a general service for the biomedical community. This service was called MEDLINE (for MEDLARS On-Line). MEDLINE, which contains about half a million references from the most recent medical journal literature, is accessed by terminals located in some 350 medical libraries throughout the nation (and in sev-

eral foreign countries) via a telephone-based communication network. By "conversing" with the computer at NLM using the typewriter-like terminal, a user is able to retrieve almost instantaneously references to the latest journal articles in his area of interest.

The result of a MEDLINE search may be printed directly on the user's terminal (on-line) or, if a large number of citations is involved, it may be printed by the NLM computer (off-line) and mailed to the user. The growth of MEDLINE has been dramatic since its introduction in late 1971: Searches are now being done at the rate of 400,000 per year. Institutions authorized to use MEDLINE pay nominal charges which serve only to defray the cost of maintaining the communication network. The institution may pass the cost of this service on to the user.

There are now several National Library of Medicine data bases available for searching on the nationwide communications network:

MEDLINE: A data base of about 500,000 citations to articles from journals indexed in *Index Medicus* for the past 2–3 years. The data base also includes nursing and dental journals not covered in *Index Medicus*. MEDLINE is updated monthly; each January the earliest year's citations are dropped from MEDLINE to make room for the upcoming year's input.

SDILINE (Selective Dissemination of Information On-Line): Contains all citations to the forthcoming printed edition of the monthly *Index Medicus*, thereby making available some 18,000 citations to network participants almost 1 month prior to publication of *Index Medicus*.

CATLINE (Catalog On-Line): A data base containing full bibliographic information for all materials cataloged at the library and appearing in the *NLM Current Catalog* since 1965. It contains about 160,000 citations and is updated twice a month. CATLINE may be used in support of a number of library activities, ranging from acquisitions and cataloging to reference and interlibrary loan.

SERLINE (Serials On-Line): A data base of serial records containing bibliographic and locator information for some 6,000 current biomedical serial titles. Using SERLINE, it is possible to identify which specific titles are held by any of over 100 participating medical libraries. SERLINE is used primarily in support of interlibrary loan, cooperative acquisition, and reference functions within the network.

TOXLINE (Toxicology Information On-Line): An extensive file of about 400,000 citations and abstracts in the fields of toxicology and pharmacology as they relate to medicine, environmental pollution, and occupational health and safety.

The MEDLINE and associated services operate on IBM 370/158 computers located at NLM and the State University of New York in Albany. The data bases are stored on IBM 3330 disk units. Telephone and network connections are handled by a communication controller which has over 80 data lines from the Bell Telephone Network, the Federal Telephone System, the Teletypewriter Exchange Network, and the network of TYMSHARE, Inc. The majority of MEDLINE users have portable, quiet terminals, which can be used with any telephone; the telephone fits into the terminal and connects it to the computer. Later models are sufficiently quiet to be placed in library reading rooms. All terminals provide a typewritten output which can be used to locate the desired documents.

The approximately 350 institutions now offering MEDLINE services include medical schools, independent medical libraries, major hospitals, and selected federal institutions. These institutions provide their own terminals, staff for the operation of the service, and pay charges based upon use. Most important, they agree to extend on-line search services to health care professionals who are not among their usual clientele. This commitment allows access for all professionals in health care delivery, medical education, and biomedical research, regardless of their location or affiliation.

PROGRAMS OF GRANT SUPPORT

The development of the nation's medical libraries did not keep pace with the greatly increased funding of medical research and education during the period of the late 1950s and early 1960s. As a result, the libraries were not able to provide efficiently the increasing information services demanded. Recognizing this disparity between need and performance, the Congress, in 1965, passed the Medical Library Assistance Act, PL 89–291. By the end of 1975 some $75,000,000 had been awarded under this act and its extensions. The underlying purpose of the program is to improve biomedical information services so as to provide equal access to the world's scholarly record for all health professionals. To do this, the 1965 act authorized the following grant programs:

1. Construction of library facilities
2. Training in medical library sciences
3. Special scientific projects support
4. Research and development in medical library science and related fields
5. Improving and expanding medical library resources
6. Establishing regional medical libraries
7. Biomedical publications support

Construction. During the 4 years of this program's life, the National Library of Medicine made grants to assist 11 health library construction projects. These 11 libraries accommodate over 1,300,000 volumes, more than doubling the capacity of the inadequate facilities they replace. The program of construction grants was the only authority not extended in subsequent renewing legislation.

Training. Innovative graduate and postgraduate training programs for medical librarians, biomedical communication specialists, and medical historians are supported by a program of training grants. Graduates of these university-based programs are trained to become directors or professional staff members of biomedical communications programs, medical libraries, and health science information systems throughout the United States. The success demonstrated by these training programs has been an important factor in encouraging other universities to design and develop programs for health communication specialists.

Special Scientific Projects. These grants enable senior health professionals to devote their full time to scholarly projects of analysis, evaluation, and synthesis of broad health topics. The projects fall into three major categories: historical work,

where the record of the past is reviewed and interpreted for the lessons it offers to the solution of current problems; critical reviews of medical specialties or biomedical problem areas which summarize and interpret the accomplishments of a major specialty or discipline; and analyses of health care systems or of health care institutions to assist health planners, administrators, and practitioners.

Research and Development. Since many of the problems of providing biomedical information services can only be resolved by sophisticated investigation, research, development, and demonstration projects in the following program areas are supported by grants: (1) medical library operations, manpower, and services; (2) biomedical communication; (3) health education and knowledge transfer; and (4) historical research in health fields.

Improving Library Resources. The first phase of grant assistance for library resources gave priority to correcting deficiencies in collections and personnel and to encouraging increased support for medical libraries by their parent institutions. The second phase encouraged the development of effective, efficient, and cost-saving methods of providing services to users. A third phase put emphasis on increasing the quality and quantity of services at medical libraries by encouraging cooperation and coordination among all health libraries. In all, some 700 medical libraries have received grant assistance to increase their collection of materials and to improve services to library patrons.

Regional Medical Libraries. Eleven regions, covering the 50 states, form the Regional Medical Library Network. Regional boundaries were drawn up and 11 Regional Medical Libraries designated in existing institutions following studies of the distribution of health professional manpower and existing patterns of interlibrary cooperation. Grants are available to the Regional Medical Libraries for assistance to assess regional needs, develop innovative programs, and demonstrate new techniques to improve or expand the service program. The basic document delivery (interlibrary loan) and reference services, which are common elements of all regions, are funded by contracts with the National Library of Medicine.

Biomedical Publications. The annual volume of new health information far outstrips the assimilative capacities of the country's health workers. Preparation and publication of many types of secondary literature resources which synthesize, compress, and repackage this health-related information enable faster and more effective utilization of new knowledge by the practitioner, scientist, and educator. The NLM supports by grant the preparation and distribution of bibliographies, critical reviews, handbooks, manuals, atlases, translations, periodicals, historical works, and other monographs.

TOXICOLOGY INFORMATION PROGRAM

The Toxicology Information Program (TIP) was established at the National Library of Medicine in 1967 in response to a recommendation by a panel of the President's Science Advisory Committee. The program is responsible for: (1) setting up computer-based data banks of toxicology information derived from the scien-

tific literature and from the files of collaborating governmental and nongovernmental organizations, and (2) establishing toxicology information and data services for the scientific community.

Computer-Based Data Banks

For its data bank building effort, TIP has concentrated on creating files that are searchable in on-line, interactive systems. Once such files have been built, they are used to fulfill the service mission of the program.

The most important and widely used retrieval service built and maintained by TIP is TOXLINE (Toxicology Information On-Line)—a bibliographic file and service covering the journal literature of toxicology. TOXLINE provides bibliographic access to an extensive collection of articles on human and animal toxicology and related subject areas. Some 400,000 full bibliographic citations, almost all with abstracts and/or index terms and Chemical Abstracts Service (CAS) Registry Numbers are available for on-line search. Over 100 government agencies, academic institutions, and commercial organizations subscribe to TOXLINE on a pay-as-you-use basis.

CHEMLINE is an on-line chemical dictionary which was built by TIP in collaboration with Chemical Abstracts Service and the Computer Sciences Division of the Oak Ridge National Laboratory. CHEMLINE records contain CAS Registry Numbers, molecular formulae, preferred chemical nomenclature, and generic and trivial names. Most of the 70,000 compounds in CHEMLINE come from the TOXLINE file. The data items are extracted from the Chemical Registry Files of CAS. CHEMLINE is an aid to TOXLINE users in finding substance-related information.

After careful evaluation of existing systems, the decision was made to adopt the CAS Registry Numbers as the unique identifiers of chemical substances in the bibliographic data files. In collaboration with Chemical Abstracts Service, TIP modified and installed the CAS Name-Match system. The basic function of the Name-Match system is to compare an input name against the CAS Registry Nomenclature File. If a match is found, the system outputs a CAS Registry Number, molecular formula, and CA Index Nomenclature for the input name. The Name-Match system has been installed in the computer at NLM and at the Oak Ridge National Laboratory.

An on-line retrieval system called the Toxicology Data Bank contains evaluated data on chemical substances. The data is extracted from monographs, critical reviews, criteria documents, and data files of specialized information centers. Only substances to which sizable population groups are exposed and which are known to be hazardous are included in the Toxicology Data Bank. The data elements included in this file come from the areas of chemistry, biomedicine, manufacturing, environmental hazards, and use limitations (radiation, fire potential, etc.).

All on-line files are stored in NLM's computer. Users in the United States can access the computer from their own terminals via the same national, telephone-

based communications network used for MEDLINE. In most of the files, free-text searching is used. Subsets of records thus retrieved can be further searched through the use of a string-search capability. On-line display as well as off-line print features are available to the user.

Information Services

The Toxicology Information Program sponsors a query–response service through the NLM-funded Toxicology Information Response Center at the Oak Ridge National Laboratory. The services this center provides include access to specific published toxicology data, individualized literature searches, annotated and/or key-worded bibliographies, state-of-the-art reviews, and custom searches of computerized data bases (such as TOXLINE and MEDLINE). Searches are performed for requesters under a partial cost-recovery system billed through the National Technical Information Service.

In addition to the on-line data retrieval systems and the query–response service, the Toxicology Information Program sponsors various publications, including the state-of-the-art reviews; a compilation, in two volumes, of annotated references on drug interactions; *Abstracts on Health Effects of Environmental Pollutants* (partially funded by TIP, published by Biological Abstracts); and *Toxicity Bibliography*, published by the NLM from the MEDLARS data base.

LISTER HILL NATIONAL CENTER FOR BIOMEDICAL COMMUNICATIONS

On August 3, 1968, President Lyndon B. Johnson signed Public Law 90–456, which authorized the Lister Hill National Center for Biomedical Communications. Secretary of Health, Education, and Welfare, Wilbur J. Cohen, announced the formal establishment of the center within the National Library of Medicine on September 15 of the same year, saying:

> This Center . . . will serve as the delegated agent for the Department in the development and coordination of networks and information systems to improve health education, medical research, and the delivery of health services.

Since its establishment, the center has been a leader in applying modern communication technology to the problems of biomedical information transfer.

The Lister Hill Center has a staff of 24; its offices and laboratory are located in the National Library of Medicine. Plans are underway for the construction of a new building, which the center will share with other library activities.

The Lister Hill Center has identified four areas where communication technology can make substantial contributions to improved biomedical education and practice:

> 1. Reducing the effects of maldistribution of health professionals and health services and facilitating the provision of consumer education concerning health services.

2. Improving the quality of health care records and improving access to data sources necessary for evaluating the quality of care.

3. Educating health professionals by facilitating a more equitable distribution of medical education resources; helping students become familiar with technology and its potential; improving the quality of educational resources; and providing resources which make alternative presentation modes possible, so as to adapt the educational processes to be more responsive to individual student needs.

4. Sustaining and updating the competence of health professionals by familiarizing them with technology and its uses; reducing the effects of maldistribution of resources for continuing education; and improving the quality of resources for continuing education.

Since its beginning in 1968, the center has used the research contract as its principal method of implementing projects. Funds are used to build, test, and evaluate prototype communication networks rather than actually operate such networks. When projects show promise of becoming self-sustaining, or when they have provided all necessary data, the center withdraws support in order to free funds for new projects.

Among the modalities of information transfer examined by the Lister Hill Center are daily communication, via satellite, between native health aides in widely scattered Alaska villages and physicians at a Public Health Service (PHS) Indian Health Service hospital; a microwave two-way television network in New England for continuing education of community-based health professionals; and a national network for sharing computer-aided instruction programs among health education institutions.

Satellite Medical Communication

Satellite communication was introduced to "bush" Alaska in late summer of 1971 through an experimental medical network financed by the Lister Hill Center. Ground stations costing about $3,000 each were installed by the University of Alaska's Geophysical Institute, which manages the network and maintains the equipment. The National Aeronautics and Space Administration's (NASA) Applications Technology Satellite (ATS-1) is used like a tall (22,000-mile high) tower providing line-of-sight communication to and from each of 26 ground stations located throughout the state, avoiding most of the interference which plagues conventional high-frequency radio communication in Alaska. The network has been used to demonstrate and document the potentials of improved voice communication between and among widely dispersed native community health aides, doctors, and nurses in central Alaska.

The major experiment involves daily two-way communication between community health aides in geographically isolated communities and a Public Health Service physician located at the Service Unit Hospital in Tanana. Health aides, who after 12 weeks of training provide all of the primary health care in their communities, are now able to consult daily with a doctor concerning treatment of most of their cases, where formerly radio contact was uncertain and could result in periods of "blackout"—no communication—for up to a week.

Each of the participating health aides has a "satellite radio" in her home connected by cable to a nearby antenna. Every day a doctor at Tanana calls each health aide in turn on the single "party-line" satellite radio channel. Health aides may ask the doctor for specific instructions after describing signs and symptoms, or may simply verify their own diagnosis and treatment. The medical facilities in the villages are still very limited, so that any serious cases must be evacuated. The satellite radio can then be used to arrange for a plane to evacuate such patients.

The NASA Application Technology Satellite Series 6 (ATS–6), launched in 1974, is the sixth of a series of experimental satellites designed to explore communications, navigation, and scientific phenomena in space. This satellite is sufficiently powerful to provide quality medical television in Alaska with simple, relatively inexpensive ground terminals. Using ATS–6, it is now possible to provide audio/data/video communication links between the community health aides and physicians and medical specialists. Television equipment and biomedical telemetry instruments will permit actual medical diagnosis and "live" consultation. The ATS–6 satellite will be used for the video links, while audio and data links will be via the ATS–1 spacecraft.

New Hampshire/Vermont Medical Interactive Television Network

Two-way interactive television provides one possible answer to the problems of continuing medical education faced by those who practice medicine in rural areas. Television can bring the medical school classroom to the small community hospital and, simultaneously, bring the busy community practitioner to the university classroom.

Supported by the Lister Hill Center, the New Hampshire/Vermont Medical Interactive Television Network initially consisted of a single link, over leased microwave facilities, connecting Dartmouth Medical School and Mary Hitchcock Memorial Hospital in Hanover, New Hampshire, with Claremont General Hospital, 30 road miles away. In the spring of 1972, construction began on a mountaintop microwave network, extending 150 miles to the northwest, linking Dartmouth with the University of Vermont College of Medicine and hospital in Burlington, Vermont. Central Vermont Hospital in Berlin was added to the network, while Claremont General Hospital was connected over the network microwave links, replacing the leased facilities. Construction and testing of this fixed network was completed in 1972. In 1973 three additional stations, served by a van-mounted mobile unit, were added to the network. Rockingham Memorial Hospital, Claremont Vocational Technical College, and Windsor State Prison are all within a 20-mile line-of-sight radius of Mt. Ascutney; all three have permanent antennas focused on the Ascutney tower. The van carries microwave transmitting and receiving equipment, and television cameras and monitors. On arrival at a site, the van is connected to local power and the site becomes part of the network.

The network has become a working tool for the medical and allied health personnel of these seven locations. Each week, air time is allotted to such programs as grand rounds, speech therapy, conferences in neurology and neurosurgery, psychiatric consultations, and courses for nurses.

A management consulting firm was retained in 1973 to evaluate the impact, cost-effectiveness, and potential for self-sufficiency of the network. Their report showed that interactive television is an effective medium for providing educational and other services in a rural medical setting—that indeed, for formal educational purposes, the television is as effective as comparable classroom instruction. Also, the network may be of high value in promoting "best medical practice" by affirming practitioner judgments on case management and by encouraging the adoption of new practices already known to the rural medical community.

Computer-Assisted Instruction

Since 1972 the Lister Hill Center has been sponsoring an experiment to promote the sharing of computer-assisted instruction (CAI) resources among medical schools, hospitals, and other health-related organizations. Three centers of biomedical CAI expertise were put on-line via a nationwide commercial time-sharing communication network. The three centers are Massachusetts General Hospital, Ohio State University College of Medicine and, until February 1974, the University of Illinois at the Medical Center, Chicago. In April 1974, some of the UIMC programs were transferred to the Ohio State University computer.

Massachusetts General Hospital (MGH) offers a variety of computer simulations of disease syndromes, biomedical models, and clinical encounters. The MGH programs have varied applications, from preclinical study in undergraduate medical education to clinical use by residents and other practicing physicians. Ohio State University (OSU) Medical School has specialized in the application of computer-assisted instruction to the first 2 years of undergraduate medical education. The OSU repertoire also includes programs of interest to nurses, nursing students, optometry students, allied medical profession students, basic medical science graduate students, and staff members of community hospitals. Retained from the University of Illinois Medical School are a set of simulated clinical encounters. These are particularly applicable to the second 2 years of undergraduate medical education, with applications also for self-evaluation in continuing medical education.

Over 80 institutions (primarily medical schools) have used the network for a variety of purposes. These include: introducing CAI on campuses, integrating available materials into the curriculum, using the network as a supplement to other forms of training, using the material as a remedial tool, stimulating local CAI activities, and encouraging broader faculty use of the variety of educational resources available. About 70% of the CAI network's use is by medical students, the remainder by physicians, nurses, and allied health personnel. Total usage has ranged as high as 2,800 hours a month (there are an average 2.5 teaching sessions per hour). Since there is a tendency for several students to group around the terminals and to interact as vigorously with each other as with the programs, it is probably conservative to estimate that the network has provided over 15,000 interactive teaching sessions per month.

The experiment is demonstrating that schools are interested in sharing CAI materials for a variety of purposes; however, the present technical implementation of the network is too costly for the long run. Therefore, the Lister Hill Center is

exploring alternative distribution methods, some of which may well involve an initial capital expenditure on the part of the using institutions, but which will result in substantially reduced operating costs. The goal of the experiment is to encourage the exchange of educational programs while, at the same time, encouraging local institutions to modify materials, encouraging local authoring, and keeping records of individual student performance. The Lister Hill Center will maintain an active interest in the broader problems of resource sharing including: evaluation methodologies, content development issues such as copyright and author incentives, and helping faculty members learn how to use these new materials effectively.

NATIONAL MEDICAL AUDIOVISUAL CENTER

The library's National Medical Audiovisual Center is responsible for a national program to improve the quality and increase the use of audiovisuals in schools of the health sciences and throughout the biomedical community. The center was started in the early 1940s to produce and distribute teaching films for the Malaria Control in War Areas Program in Atlanta, Georgia. As that program evolved into the Public Health Service Center for Disease Control, the audiovisual activity became known first as the Medical Audiovisual Branch, and later as the Public Health Service Audiovisual Facility. The National Medical Audiovisual Center, still located in Atlanta, acquired its present designation when it was transferred organizationally to the National Library of Medicine in 1967. It is planned that the center will eventually be moved to Bethesda, Maryland.

Since 1971 the center has worked jointly with the Office of Audiovisual Educational Development, a component of the Bureau of Health Resources Development, Health Resources Administration, DHEW. In addition to the programs in Atlanta, the two organizations provide contract support to various schools, consortia, and national professional associations which have common or complementary goals in audiovisual health education. The two organizations receive guidance from a Priority Review Committee made up of private and public health physicians, dentists, nurses, allied health professionals, and educators. This committee recommends general curriculum areas which are most needful of or most responsive to cooperative programs.

The center's highest priority activity is to assemble, evaluate, catalog, and distribute audiovisual instructional materials. Organizations such as the Association of American Medical Colleges and the American Association of Dental Schools assist in locating and evaluating existing materials. Items judged to be of sufficient technical quality for national distribution are then submitted to panels of experts to see that their information is up-to-date, well designed, and effectively presented. Materials which successfully complete this review process are cataloged and indexed for inclusion in a computerized data base known as AVLINE (*Audiovisuals On-Line*). Computerized citations include brief abstracts and other pertinent information, so that potential users will be able to identify specific instructional aids

and find out how they may be obtained. Frequently they are available on loan from the center itself.

In a typical year, the National Medical Audiovisual Center sends out some 70,000 audiovisual units on loan. The great majority of these are 16-mm motion pictures. A program to replicate health education materials on blank videotapes provided by the requester grew to such proportions that the reproduction operation was turned over to the General Services Administration's U.S. Government Film Sales Program.

The center provides extensive advisory and consultation services on various aspects of audiovisual educational technology, including facilities planning and materials development. Seminars and workshops are conducted at the center and at universities to assist health professionals in developing effective audiovisual teaching units.

The center, in its "applied research" role, attempts to test new approaches and innovations in the application of audiovisual techniques to health education. Specifically, for example, the center has pioneered in creating "visual abstracts," a devise to provide the potential user of an audiovisual unit with more than just a verbal description of the subject matter. Microfiche, videotape highlights, printed frames from film or videotape programs—these and other formats are being tested to allow users to preview visually key elements as an aid in their selection of material.

The center has full audiovisual production facilities, including motion picture and television. Some of the films and videotapes are based on pilot instructional units developed at the workshops. Others are produced in cooperation with universities and professional societies. Increasingly, the accent is on producing programmed, self-instructional materials that allow the student to progress at his own pace. At the same time, because they are constructed in modules, they give the instructor maximum flexibility to update the program. During the development of self-instructional units, each key stage is student-tested, and critical stages are peer-reviewed for currency and accuracy, so they may be refined and revised, as necessary, prior to the final production of both visual and audible portions.

INTERNATIONAL ACTIVITIES

The National Library of Medicine's international activities are a natural extension of its domestic responsibilities. Although they vary in scope, mechanism, and immediate objective, all arrangements with foreign institutions and agencies share the common criterion that they be of demonstrated value to the United States.

Exchange Programs and Services

The library maintains exchange agreements with approximately 700 domestic and foreign research and educational institutions and professional societies. In

return for receiving NLM publications, partners agree to balance the exchange over a period of time by supplying biomedical literature selected by NLM, as well as materials of their own selection. An attempt is made in each case to supply NLM with literature of nearly the same value and type as the exchange partners receive from the library.

NLM also provides library services on an international basis. Services for developing countries are provided through an NLM agreement with the U.S. Agency for International Development (AID). These services meet a demonstrated need for countries where modern medical information is unavailable because of inadequate library facilities. During 1974, approximately 20,000 services were provided to 48 developing countries. These services include interlibrary loans, computer searches, reference questions, audiovisual loans, and subscriptions to some of NLM's publications. The broad geographic distribution of services is: Latin America, 51%; Near East, 42%; Far East, 4%; Africa, 3%. Subject coverage may include all aspects of health care, medical research, education, and practice. Broad topics of special interest are nutrition, population studies, and communicable diseases.

For non-AID countries, NLM can provide interlibrary loans and audiovisual loan services for a fee. Although historically the library responded to all requests received, it was forced because of severe personnel and budgetary limitations to curtail these services. Restoration was made possible for interlibrary and audiovisual loans on a fee-for-service basis.

Pan American Health Organization

Because Latin America has consistently been responsible for over 50% of the international requests NLM receives, the library has been cooperating with the Pan American Health Organization (PAHO) in its efforts to improve biomedical communications in that area. In 1969, PAHO established a Regional Library of Medicine (BIREME) in São Paulo, Brazil, for which NLM provides technical consultation and backstopping. BIREME provides over 50,000 services annually within Brazil and by 1974 was beginning to increase its assistance to other Latin American countries, including an extensive training program for information users, managers, librarians, and technicians; an audiovisual program; and an experiment to access the MEDLINE data base.

MEDLARS Cooperation

The NLM has eight bilateral quid-pro-quo arrangements concerning MEDLARS with the United Kingdom, Sweden, France, Germany, Japan, Australia, Canada, and the World Health Organization (WHO). The oldest of these agreements has been in operation since 1966. Under these agreements, NLM provides computer tapes, documentation, and training in return for indexing input of approximately 15,000 articles annually per center. Under new arrangements made in 1974, there

are three options: tapes, tapes plus software, and on-line access. The selections made by the centers are as follows:

Tapes—Germany, Japan
Tapes plus software—Australia, Sweden
On-line access—France, Canada, WHO
Combination of tapes plus on-line access—United Kingdom

There are periodic technical workshops at the program and operating level, but there are also meetings of policy level officials to review the nature and scope of these agreements, the modernization of MEDLARS programs, regional coverage, and the exchange of persons and technical information.

Special Foreign Currency Program

Under the Special Foreign Currency Program (PL 480), the library spends non-U.S. currency in Poland, Yugoslavia, Israel, India, Pakistan, Egypt, and Tunisia to prepare publications on health subjects. The funds used for the various projects have accumulated in those countries as a result of the sale of U.S. farm products. Under the Agricultural Trade and Assistance Act of 1954, funds so accumulated may be spent by U.S. agencies on projects in the foreign countries involved.

Historically, the NLM PL 480 programs were initiated to translate specialized biomedical literature into English. Subsequently the emphasis of the program has been changed to the development of bibliographic tools useful for physicians in research, education, or practice, and a critical review program. These programs are instrumental in developing products: directories, handbooks, monographs, and critical reviews which improve the flow and availability of biomedical information.

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ROBERT B. MEHNERT

Catalogs and Cataloging Services*

HISTORY

Cataloging at the National Library of Medicine (NLM) began in the first half of the 19th century. An early book catalog, compiled in 1840, was called *A Catalogue of Books in the Library of the Surgeon General's Office (1)*. It was handwritten and had only 21 leaves. The *Catalogue of the Library of the Surgeon General's Library, United States Army (2)*, published in 1872, was much more ambitious. It had 454 pages and a supplementary *List of American Medical Journals*. In 1880 the *Index-Catalogue (3)* began publication. It ran through five series (61 volumes). Ending in 1961, the fifth series marked the completion of an era, for not only was this the date of the last issue of *Index-Catalogue*, but it marked the last full year in the old home of the library at 7th Street and Independence Avenue in Washington, D.C.

At the same time that the later volumes of the *Index-Catalogue* were being published, the library was beginning to introduce new programs. The *Index-Catalogue*, which was both a listing of books in the library's collection and an index to journal articles, appeared much too slowly to meet the needs of the modern world. The librarian wrote in 1936 that "Material filed under 'A' [in card form], for instance, will not be printed until the 5th series is begun, perhaps in 1950" *(4)*. Actually, the first volume of the fifth series was published in 1959. In order to remedy this situation, several new library publications were begun. One was an index to journal articles, the *Current List of Medical Literature (5)*, begun in 1941. It became *Index Medicus (6)*, new series, in 1960.

The other replacement for the *Index-Catalogue* was the Army Medical Library's *Catalog Cards (7)*, which was issued annually with 5-year cumulations, beginning in 1948. The name changed several times to reflect variations in the scope of the publication and the name of the library, but in 1966 a major change resulted from the establishment of MEDLARS (Medical Literature Analysis and Retrieval System), a computer-based system that became operational in 1964. Although its major product was *Index Medicus*, the library quickly seized on the MEDLARS capability to produce a catalog with greatly increased frequency—biweekly, with

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* The References for this section begin on page 145.

quarterly and annual cumulations—the *National Library of Medicine Current Catalog* (*8*). It changed to a semiweekly (current English titles only), monthly, quarterly, and annual, in 1968. A 6-year cumulation (1965–1970) was produced in 1971, containing all of the library's machine-readable cataloging (1965 records had been converted from the old format). In these publications is recorded the major work of the Cataloging Section at NLM.

CATALOGING

The "how" of cataloging at the library, since its inception in the early 19th century, has undergone constant change. The only early rules known are those contained in the introductions to the major publications of the time. That there *were* rules is implied in the 1862 *Report* of the Surgeon General, William A. Hammond, in which he said: "A large number of memoires and reports of great interest to medical science, and military surgery especially, have been collected and are now being systematically arranged" (*9*).

In 1936, for the celebration of the "one hundredth anniversary of the founding of the Army Medical Library," the Librarian, Colonel Harold W. Jones, issued a pamphlet "Routine Operation of the Army Medical Library" (*10*). According to this report, descriptive and subject cataloging were separate operations:

> Subject classification of cards made by the Indexers is called "heading" in library slang. "Heading" is a very important phase of library work, and is done by the medical members of the Library staff, that is, by the Librarian, and the two Assistant Librarians, who have kept themselves up-to-date with medical terminology.

There was a card catalog in the early days, which contained a variety of entries, some typed especially for the card catalog, some represented by Library of Congress (LC) cards, and some consisting of clippings from the *Index-Catalogue* pasted on 3 x 5 in. cards. Each, if it represented a title in the library's collection, had a "heading" in the upper left corner. This served both as a subject analysis and a location symbol, for the books were arranged on the shelves alphabetically by main entry, usually author, under the heading. In the book stacks, a large card, on which the heading was lettered, projected from the shelf at the beginning of its alphabetical location. Some of the Library of Congress cards represented medical titles not actually in the library's collection. These, of course, had no heading in the upper left corner. Cards for some ephemeral material had a box number in the upper left corner—a collective cataloging device. Citations for theses were preceded by an asterisk as they are in the *Index-Catalogue*. Theses were filed on the shelves in a special collection, first by country, then by university, and then alphabetically by author for each academic year. This filing system of theses is still maintained. A survey (*11*) of the library was made in 1945 by a committee

chaired by Keyes D. Metcalf, then Director of Libraries, Harvard University. The survey committee recommended that the library be reorganized more nearly in conformity with other major research libraries in the country. For cataloging this meant that a Cataloging Division was established, with M. Ruth MacDonald as the first Division Chief.

The library's cataloging has never conformed entirely to American Library Association rules, but it did, in 1946, take on much of the appearance and many of the rules established at that time by the national body. The American Library Association finally, in 1967, caught up in two areas with its nonconforming member when it made two major changes in its rules to accord with procedures that the Army Medical Library (AML) had followed from its reorganization in 1946. AML entered each serial under the name used when published and each organization under its name at time of publication. The ALA rules recommended entry of each under its latest name only. If a serial or an organization changed its name, it was for all practical purposes a new serial or a new organization at AML, with histories and cross-references to tie the old to the new. NLM's usage was recommended by the American Library Association for the first time in 1967 (*12*), and adopted by the Library of Congress in March 1967 (organization change) (*13*) and in April 1971 (serial change). American Library Association and Library of Congress rules were further modified for NLM's use. Most modifications were omissions of data elements: for example, NLM has never given size in the collation.

During the years 1946–1965, cataloging prepared at the National Library of Medicine was typed in card format on mats and sent to the Library of Congress, which produced cards for NLM by a photo-offset process. LC also sold NLM cards, but only by annual subscription to those libraries willing to buy the entire year's production. There were few subscribers. Since 1966, NLM card images have been produced by the computer and duplicated by photocopy. This process took about 2 years to develop. When, in 1964, it was found that the computer programs designed to produce *Index Medicus* were inadequate for cataloging, three program analysts and programmers were assigned to work with the NLM Technical Services Division (responsible for cataloging). The original intention was to have an automated technical services program begin with the initial ordering of the book or journal. A citation found in the trade literature was to be entered immediately into the computer and updated from that time on until it was cataloged, ready for on-line retrieval, and its cards produced. The computer analysts interviewed all staff members of the Technical Services Division (TSD). They prepared flow charts, which were reviewed by the TSD staff and corrected several times. A decision was made to begin the automated programs with cataloging only. From July to November 1965, a parallel system was in operation, with one duplicate prepared each day for the automated system's test. In this way the computer staff had material to test and the catalogers learned to use new data forms and computer symbols (many meaningless to the cataloger, but absolutely necessary to the NLM computer program).

Consideration had to be given to compromises that could be made with regard

to the need for old practices and the cost of implementing them in the machine. Very few compromises, however, were actually made. Filing is still not completely satisfactory because of machine difficulties, but the rules are rather traditional. A few symbols and diacritical marks cannot be used in cataloging because the computer lacks them. The biggest compromise, perhaps, is that all titles are given in the Roman alphabet. Titles appearing in Slavic, Oriental, and other languages not using the Roman alphabet are cited in transliterated form only.

The *National Library of Medicine Current Catalog* was one of the first regularly recurring, completely automated book catalogs in the world. It began publication with an issue dated January 14, 1966. The latest issues (1972) include four sections: monographs, technical reports, audiovisual materials, and serials. Technical reports are defined as the recording of work done under contract with the United States government and a few foreign governments. They have been cataloged since 1968 according to the *Standard for Descriptive Cataloging* (*14*) of the Committee for Scientific and Technical Information (COSATI) of the Federal Council for Science and Technology. Because of the radical differences between the COSATI rules and the *Anglo-American Cataloging Rules* (*15*), which NLM adopted with slight modifications in mid-1966, citations for these reports are included in a separate section of the *Current Catalog*. The audiovisual section of material cataloged by the library's National Medical Audiovisual Center in Atlanta has been included since July 1971. Beginning with the January 1972 issue, the *Current Catalog* has included a separate serial section. Prior to 1972, serials and monographs were listed together. In the cumulated catalogs, each of these sections has a name section and a subject section. In the monthly issues, name sections only are issued.

The pre-1945 card catalog has already been described; the new card catalog begun in 1946 is divided into a Subject Catalog and a Name Catalog. In the Subject Catalog, guide cards are used to maintain an alphabetical arrangement of main headings, subdivided by topical, geographic, and form subheading. No subject headings are printed at the top of cards in this file. Sequence is maintained by the guide cards alone.

Other files are maintained primarily for staff use. These include the Shelflist (with its audiovisual section), the Name Authority File, and the Series Decision File.

CLASSIFICATION

The National Library of Medicine classifies its medical and preclinical materials according to the *National Library of Medicine Classification* (*16*). Material on all other subjects is classed according to the *Library of Congress Classification* (*17*).

The *NLM Classification* was originally compiled by Miss Mary Louise Marshall in a preliminary edition in 1948. The preliminary edition was revised by Dr. Frank B. Rogers and issued as the first edition in 1951. The *Survey Report* of 1944 (see above) said:

The best classification that could be devised for the Library would be one which combined the notation of the Library of Congress system with the basic plan of the Cunningham classification (18).

The result of this recommendation is that the material is arranged by anatomical systems, when applicable, or by specialties or other general categories when an arrangement by a particular system is not possible. This practice is probably the greatest difference between the NLM and the LC classifications, since the Library of Congress gathers material together by specialty. Thus, for example, whereas NLM keeps anatomy, physiology, pathology, diagnosis, and treatment (including surgery) together in the WF schedule if it all pertains to the lungs, LC separates the material, with anatomy of the lungs in QM, physiology in QP, etc. The *NLM Classification* is revised periodically and kept up-to-date between revisions by the "Additions and Changes" appendix to the library's *Notes for Medical Cata-logers (19)*.

SUBJECT HEADINGS

The early "heading" at the NLM was selected by the librarian or other medical staff member as noted before. In the 1940s, the new Cataloging Division acquired a subject heading specialist, and a subject authority card file was begun. The headings were established according to the patterns set by the Library of Congress, but were not LC headings. A separate card file was compiled of geographic sub-headings, with a record of all main headings under which each was used.

In the late 1950s, the library decided once again to make an effort to integrate for publication citations to books and journal articles as they were in the old *Index-Catalogue*. The only part of that effort accomplished to date is the construction of *Medical Subject Headings* (MeSH) (20). MeSH includes main headings and topical subheadings, used, when possible, in the same way by both indexers and catalogers. Form subheadings are listed in MeSH, but used only by the catalogers. Main headings that may be subdivided geographically only by the catalogers are listed, but the place names selected are not included in the published MeSH. Like the Library of Congress, the National Library of Medicine uses the U.S. Board of Geographic Names as its authority for place names.

The procedure to establish subject headings at NLM is unique. Place names, when used as subject headings alone, are treated like personal and corporate names used as subjects, in that they are filed in the Name Section of the library's catalogs. Actually, the library rarely uses such a heading. The general rule is that place names are subheadings, never main headings. Thus, NLM uses *History–France,* not *France–History*. Another set pattern is the hierarchical arrangement of the individual subject phrase. The arrangement is as follows: Main heading followed by topical, geographic, form, and/or language subheading, in that order. Time subheadings are not presently being used. When they were, they followed geographic subheadings in the hierarchy. Occasionally, the same word, such as

"periodicals," is used either as a topical subheading or a form subheading, depending on the concept to be expressed.

The pattern occasionally seems excessively rigid, but in this area consistency is desirable—since both man and machine can thus be assured of finding the same data element in the same place on every occasion.

COOPERATION WITH OTHER LIBRARIES

The Surgeon General's Office Library took part in the cooperative cataloging program inaugurated by the Library of Congress in the early years of the 20th century. From 1948 to 1965, National Library of Medicine cards and those of its predecessors were reproduced by the Library of Congress, and the annual and cumulated catalogs were issued as supplements to the *Library of Congress Catalogs.*

In 1967, the U.S. National Libraries Task Force on Automation and Other Cooperative Services was established, uniting the efforts of the Library of Congress, the National Agricultural Library, and the National Library of Medicine to set consistent policies and cooperative practices. The task force set up working groups and

> has worked actively in the fields of acquisitions, descriptive and subject cataloging,
> and various phases of automation toward the ultimate goal of "development of a
> national data bank of machine-readable cataloging information . . . as a central
> resource for all libraries" (*21*).

In 1968, shared cataloging was inaugurated with the Library of Congress and cooperative cataloging with the Francis A. Countway Library of Medicine at Harvard and the Upstate Medical Center Library in Syracuse, New York (a SUNY library). Through the Shared Cataloging Program, NLM acquires a great many foreign publications, with the assistance of the LC Acquisitions Program. LC receives NLM books, identifies and supplies card numbers for those it wishes to catalog, and sends the shipment to NLM. NLM catalogs and sends a copy of its cataloging data form to LC with the book (on interlibrary loan). Each library does its own cataloging, but the LC card number is added to NLM citations and NLM classification and subject headings are added to LC citations.

The Cooperative Cataloging Program is quite different from the Shared Cataloging Program. Countway, the Syracuse Library, and NLM communicate by means of IBM 2740 terminals with each other and the cataloging data bank, now at Albany, New York. Each library informs the other two of all new books it has to catalog. The library first reporting a given title catalogs it. All data forms are assembled at NLM, reviewed for editorial consistency, and entered into NLM's computer, to appear finally in the *Current Catalog.*

In 1972, NLM began to take part in the Cataloging in Publication Project inaugurated in July 1971 by American publishers and the Library of Congress. LC

sends pertinent information to NLM when it receives a prepublication announcement of a medical book to be included in the program. NLM sends back to LC its subject headings and classification, which subsequently appear on the verso of the title page of the finished book, along with LC's cataloging information.

The cooperative programs described above are on-going, and planning continues for extending and improving them.

CATALOGING SERVICES

The library's foremost cataloging service is its publications, the *National Library of Medicine Current Catalog*, the *National Library of Medicine Classification*, *Medical Subject Headings* (McSH), and *Notes for Medical Catalogers*.

To date, catalog card sales efforts have not been very successful, but the publications are widely circulated and used by many libraries. The *NLM Classification* is revised periodically to reflect new and changing concepts. It has been translated into French (22) and is used in its original form in many libraries throughout the world. MeSH is the only one of the above-mentioned publications which does not originate in the Cataloging Section. It is prepared by the MeSH Group of the library's Bibliographic Services Division. *Notes for Medical Catalogers* is an irregularly issued publication that keeps users of the library's cataloging services up-to-date on additions and changes to MeSH, the *NLM Classification*, and descriptive cataloging policies.

The NLM Cataloging Section, in addition to issuing publications, aids other medical libraries by providing informal training. U.S. and foreign visitors spend several days or even months studying the library's cataloging practices with NLM staff members.

FUTURE PLANS

As it prepares for MEDLARS II, the National Library of Medicine Cataloging Section has great expectations for increased services to the medical library community. The interaction of computer and experienced cataloging staff offers possibilities in the near future for many additional cataloging services—for example, on-line machine searching of the cataloging data base by subject, author, publisher, or any other data element; computer tapes of a user library's holdings; and other such cataloging aids.

ADDENDUM

The above article was written in 1972. Since that time many changes have taken place characteristic of the changes that are going on in the entire library world. Corrections to the article made today may be totally inadequate to cover the situation tomorrow.

The National Library of Medicine since 1969 has prepared a weekly proofsheet (originally semiweekly) of its cataloging citations for current English titles. This

publication is reproduced and sold at a nonprofit subscription price by the Medical Library Association in Chicago. The *National Library of Medicine Current Catalog* no longer has a monthly issue nor a section containing technical reports. Libraries wanting to acquire technical reports are referred to the National Technical Information Service which indexes these reports and sells them in microfiche and hard-copy formats (address: National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161).

The "future plans" in the article are mostly a reality at this time. An on-line storage and retrieval system CATLINE (Cataloging On-Line) has made all cataloging citations prepared by the library since 1965 available to any library in the United States that has MEDLINE terminals available. Almost any data element is searchable.

Two additional on-line systems have been added. The Name Authority File, which contains all corporate entries and many personal name entries used by NLM, was not anticipated in 1972. The latter file has all cross-references traced, all histories of organizations that have been researched, and the authority for each entry as it is established.

The third computer file is AVLINE, Audiovisuals On-Line. All cataloging citations are to audiovisual materials that have been reviewed and approved by a professional medical staff and designated for audience level. There is a summary of each audiovisual cataloged.

The Acquisition Section has an on-line "in-process" file, INPROC, with on-line retrieval at NLM of a record of any publication received, but not yet cataloged.

All serials cataloged at NLM since June 1974 are entered into the OCLC (Ohio College Library Center) system as part of the CONSER program. Conversion programs have been written to convert CATLINE citations to OCLC–MARC compatible tapes.

At the same time that the aforementioned NLM/OCLC projects are being fully realized, plans are going forward for on-line cataloging and maintenance. On-line maintenance is already operational. The on-line cataloging will include the ability to transfer MARC or other OCLC records to MEDLARS terminals and to maintain them by adding NLM call numbers, subject headings, and so forth, thus making possible the use of other libraries' descriptive cataloging and having it immediately available, with NLM additions and changes, to all libraries with MEDLARS terminals.

These additions bring the situation up to the present. With the rapid advance of machine capabilities and worldwide cooperation in the cataloging area, it is difficult to predict what is yet in store.

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<div align="right">EMILIE V. WIGGINS</div>

NATIONAL LIBRARY WEEK

Librarians' attitudes toward National Library Week (NLW) have ranged all the way from wholehearted, active commitment to whatever activities will help raise their community's consciousness of library services and problems, to the mere tokenism of scotch-taping the official National Library Week poster to the reference room wall, to outright disapproval and suspicion of a program which smacks too much of "Madison Avenue" and the hard-sell gimmickry of a TV soap commercial!

Launched in the spring of 1958 with the theme: "Wake Up and Read," the National Library Week program for "a better-read, a better-informed America"

was the first concerted, nationwide effort to focus public attention on reading
as a source of personal fulfillment, on the importance of reading in the national
life, and on libraries which, if used fully and supported properly, can make reading
and information accessible to everyone.

Now in its 16th year, National Library Week has grown and developed into a
flexible promotional tool for creating general understanding and support for all
types of libraries throughout the United States. It began and has continued as a
cooperative effort among book publishers, booksellers, librarians, writers, jour-
nalists, broadcasters, and the gamut of persons involved in the media of communi-
cations.

In August 1955, a Gallup poll revealed that 61% of American adults had
not read any book except the Bible during the previous year. Twenty-six percent
of those who had attended college and 82% of those who had attended elementary
school only could not remember reading a single book during the preceding 12
months. Another study of American reading habits found that more than half
of the adults in the nation lived within a mile of a public library, yet only one-fifth
of them had visited a library during the year prior to the survey.

To the National Book Committee, an independent, nonprofit, publishers' group
organized in 1954 to foster the wiser, wider use of books and the preservation of
the freedom to read, the findings of these studies were startling. Not only were
the implications of the figures ominous for books themselves, but they raised a
serious question about the continued role of the printed word in any form within
a democratic society which ultimately depends for its survival upon an informed
citizenry.

With a mandate from the American Library Association and the American
Book Publishers' Council to "keep books free, make them widely available, and
encourage people to read them," the executive committee of the National Book
Committee, soon after its formation, voted to abandon all piecemeal efforts to
upgrade the status of reading in the public eye in favor of a massive program of
publicity and action. Their decision was based on a report prepared for the com-
mittee by Lynn Farnol, a public relations consultant of New York City, and on
talks with leaders of the library profession and other interested groups.

In embarking on the "National Library Week" experiment, two basic policy
decisions were made. First, the campaign was to be built on reading of all kinds:
magazines, pamphlets, and newspapers, as well as books. Nonprint media were
also included. According to the 1964–65 Review Sub-Committee:

> From the beginning there was never any thought of depreciating broadcasting and
> films, but rather to stress the relationship of reading to informed and responsible
> viewing and listening, thus reinforcing the concept of the social responsibility of
> all communications media.

Second, the campaign was to be based on libraries and their resources in the
realization that national publicity of the sort envisioned would have considerably
less impact without some local point of initiative, contact, and base of operations

for action; and that even extensive exhortation about reading would not create readers but might at least impel them toward the resources provided by schools and libraries. Thus, mobilizing broader support for libraries would most probably help create new and more committed readers.

In announcing official plans for the first National Library Week, to be held March 16–22, 1958, Gilbert W. Chapman, Chairman of the National Book Committee, Inc., said:

> National Library Week will be an educational and promotional program. All the forces and agencies interested in fostering lifetime reading habits will be invited to join in celebrating the importance of reading in our time.

The special steering committee appointed to organize the first NLW reflected the philosophy of a broad-based sponsorship and the interrelationships of all areas of communication. The members were: Douglas M. Black (President of Doubleday and Company); Ward Cheney (Secretary–Treasurer, National Book Committee); Marchette Chute (biographer); Louis G. Cowan (Vice-President, Columbia Broadcasting Company); David Clift (Executive Secretary, American Library Association); John Fischer (Editor, *Harper's Magazine*); Harold K. Guinzburg (President, Viking Press and the American Book Publishers' Council); William J. Nichols (Editor and Publisher, *This Week Magazine*); Theodore Waller (Vice-President, School and Library Division, Grolier Society); and Norman H. Strouse (President, J. Walter Thompson Company). The Chairman was Harold Guinzburg, assisted by David Clift and Theodore Waller as Vice-Chairmen. John S. Robling, former Advertising and Promotion Director for the National Book Committee was named Director of NLW. Funds for the headquarters staff and their travel, as well as for promotional and publicity materials, were initially raised through contributions from individuals, business firms, and foundations, with an annual sum of $3,000 budgeted by the American Library Association.

President Dwight D. Eisenhower's proclamation of the first NLW called for "the fullest possible participation by the people of the United States" and urged that "National Library Week be a time . . . for encouraging the development of a better-read, better-informed citizenry."

According to records maintained by the NLW headquarters office, 5,000 cities, towns, and villages in the United States celebrated the first NLW with a wide variety of community activities which succeeded in attracting attention to libraries and the values of reading. "Millions of Americans of all ages and income groups and in all parts of the country saw, heard, or read the appeal to 'Wake Up and Read' through national and local media and then were invited to do something about it through their own local communities."

National magazines carried 22 articles reaching 68,000,000 persons; 14 radio and TV network shows reached another 170,000,000 homes; and more than $800,000 worth of public service time was devoted to NLW free of charge by broadcasters. Newspapers published 11,607 major stories in just 3 weeks. News-

paper copy reflected the programs of the state and local committees across the country. For the first NLW, 46 states and the District of Columbia organized statewide citizens' committees. Forty states reported a total of 969 members on their state committees; 22 states reported that they had formed a total of 1,783 local committees; another 16 states tallied 4,797 people serving on local committees. Twenty-two states reported 2,826 NLW events within library buildings; 20 states reported 1,484 programs held in buildings other than libraries. About 5,066 window displays were noted in 21 states. Activities were also planned by and for young people in many areas: 20 states reported 3,920 in-school events; 15 states listed 612 events sponsored by schools at other locations in their respective communities.

Observances of NLW through the years since its inauguration have varied according to the character of the local community, as well as the energy and imagination of library leadership on the state and local levels. Some typical NLW activities have included: library "open houses"; morning coffee hours for businessmen in the public library to acquaint them with the library resources which might be of help to them; essay or other types of reading-related contests for both adults and young people; library speakers bureaus organized to present special programs for local organizations; book fairs; community reading surveys; and programs or projects planned in conjunction with local bookstores, art galleries, department stores, national organizations, or local groups. The impetus for NLW programming has, at least theoretically, come from the state library associations, which have received their direction from NLW headquarters.

From the beginning of NLW history, the steering committee, aided by the executive director and the professional staff at NLW headquarters in New York, has worked to provide a national framework and a climate of interest for the activities of state and local committees. The major accomplishments of the national office have been:

1. Obtaining editorial attention for Library Week themes in mass circulation magazines. By 1965, the response of these publications had increased from 22 with a circulation of 68 million to 60 with a circulation of 140 million.
2. Securing attention to NLW on network TV and radio. The amount of public service time donated by broadcasters has continued to rise impressively. In addition, approximately 35 network and syndicated TV and radio programs have devoted time to NLW themes, and many local stations have been creating programs of their own in recent years.
3. Introducing the NLW program to national organizations, helping them to implement their support, and urging them to stimulate their members to participate in it locally. The General Federation of Women's Clubs, the Junior Chamber of Commerce, the National Congress of Parents and Teachers, National Council of Jewish Women, Boy Scouts, Girl Scouts, National Education Association, National Council of Teachers of English, the Catholic Library Association, the American Newspapers Publishers' Association, the Magazine Publishers' Association, the American Booksellers' Association, and the Women's National Book Association are among the various organizations and professional and

industrial groups which cooperate and encourage their memberships to take part in the NLW observance.

4. Preparing display and other promotional materials to be sold at cost or below cost to libraries, schools, stores, and Library Week committees for placement throughout their communities. Posters, public transportation car cards, billboard posters, streamers, bumper stickers, table tents, bookmarks, buttons, mobiles, postcards, booklets, recordings. and filmed TV public service announcements have increased in variety and sophistication during the years since the inception of NLW. The talents of illustrators and cartoonists, such as Peter Max, Whitney Darrow, Wally Roberts, and Mark Dolan have been employed to design the visual aids; and celebrities such as Ethel Merman, Tony Randall, and other luminaries from the stage and the arts have recorded statements on the importance of reading and library use for radio broadcasting.

The themes and designs of NLW promotional materials have always been sources of controversy and vehement criticism among librarians. To some, whose aesthetic experience has been confined for years to the book jacket-staple gun school of display, the bright colors and contemporary approach of the professional commercial illustrators have evoked shock and instant dislike. Others, with more valid, intellectual objections, had their case stated with wit and authority by author Jean Stafford in her article: "Contagious Imbecility" published in *The New York Times Book Review* for May 5, 1974. Ms. Stafford expressed horror at the "distortions of history," "gutter usages," "condescending solecisms," and "breaches of propriety, taste and common sense" in the NLW posters for the current year. After criticizing one poster's ("Get It All Together at the Library") attempt at relevancy, with its emphasis on the new multimedia library and its use of would-be street English, Ms. Stafford concluded her complaints:

> Oh, shoot! Oh, shoot to death and send to perpetual damnation every one of these whimsical hooligans hell bent on aggravating the festering sores of this unwell nation, which should, in terms of years, have come of age, and should repose from time to time to read, and then to contemplate, and read again, and in this wise get together its history, inherited and native; and its prehistory; and its literature. And, at the children's hour, warmly greet the children and instead of saying, "Like I mean there was this princess who shot too much smack and was on a trip, like, man, I mean she was really spaced," instead of this flaccid pidgin, the wise and affectionate story-teller will begin, "Once upon a time."

Formal evaluations of the NLW program's effectiveness have been made in 1961, 1966, and 1972 by both the National Book Committee and the American Library Association (ALA). The effect of the first NLW observance on library circulation figures was registered by an impressive gain in some areas of the country. In Iowa, 50% of the public libraries showed an increased circulation in March 1958 over the same month of the preceding year. For the Binghanton (New York) Public Library, March 1958 recorded the highest circulation in its 54-year history. Gains of 10, 20, and 30% were noted in several other state reports of the first year. Since almost any special library program or promotion will result in a temporary rise in circulation, however, the evaluators of NLW

have sought evidence of a more significant, long-term nature to justify the expenditures of time and funds on the venture.

In 1961, a special committee of the National Book Committee under the chairmanship of John Fischer adjudged National Library Week to be clearly advancing the purposes of the Book Committee and the American Library Association. A United States Office of Education report was quoted as calling NLW one of the five events before and after the passage of the Library Services Act which "had contributed to significant progress in . . . public library development." States that had passed library state aid bills since the inception of NLW all had involved citizens' committees organized in the name of NLW; many states had also held governors' conferences on libraries as a result of NLW. Moreover, the Fischer report declared that newspaper and magazine reading and book sales had continued to far outdistance population growth since the beginning of NLW.

Meanwhile, during the same year, an ALA committee to evaluate NLW was appointed, with Dr. Margaret Monroe, library educator, as chairman. The report of this committee saw the NLW objectives as:

> to interpret to the public at large the personal rewards of reading; to achieve a wide recognition of reading as essential in a free society in which informed choices must be made; to achieve wide recognition of reading as a means of ensuring the survival of cultural values; to stimulate library development; and to engage for the cause of libraries the active interest of uncommitted laymen.

While fulfilling these goals, however, NLW had failed to coordinate its program with the professional association and the library agency structures already in existence, according to the committee. More specifically, during the early years of NLW, the orientation had been primarily toward *public* libraries; there was an overlap with National Children's Book Week, which disturbed children's librarians; the approach had been mainly "publicity" without much substance; many librarians had neglected to use the NLW program's latitude; there had been controversy over poster designs; and there had been delays in the delivery of promotional materials.

Most of these problems were subsequently solved, for by the time of the 1966 ALA evaluation, the NLW program was deemed so valuable that the evaluation committee, headed by Lillian Bradshaw, recommended ALA's financial support be doubled from $3,500 to $7,000 in recognition of NLW's value to national library development, and that ALA involvement be continued through 1972 with some improvements in internal organization and procedures.

In July 1968, however, the ALA income was insufficient to meet regular operating costs and by 1970, the association's contribution to the NLW office had been cut to a token payment of $2,000. In 1971, the entire ALA allowance to NLW was dropped.

The third NLW evaluation committee was appointed by the ALA president in 1972. In June of 1973, the official report was made by this committee, whose chairman was Helen Miller. In brief, this latest evaluation recommended:

1. That ALA should enter the last quarter of the 20th century with a responsible, responsive public relations department capable of describing the role librarians and libraries do play and can play in the life of our nation.
2. That there should be full involvement of ALA staff and membership in this enlarged public relations activity.
3. That the National Book Committee be recognized and thanked for their sponsorship of NLW through the years, their staff, their contacts, their dollars, and be invited to continue to provide such aid as they can in the future— whether it be promotional materials for NLW or joining ALA in other mutual reading and library development projects.

The report also stated that the new ALA department should be

encouraged to plan and work on an international scale as well as on a national one, from a base of a year-round PR program for libraries and librarians. It must have the capability, as well as the capacity to create innovative projects which inspire, as well as informative programs which stress accountability to membership.

It also declared that

ALA should no longer depend upon other organizations to plan and implement library public relations programs, but should itself provide a year-round program including guides for local use, and a Library Week if desired.

John Frantz, Executive Chairman of NLW, announced in a memorandum dated June 5, 1973 that due to reduced income, the full-time staff of the NLW office were to be terminated and that creative talent for posters and for advertising and story placements would be brought in as needed from the outside by the National Book Committee. The promotional materials would be produced for sale to interested local libraries and state groups, but other services, such as the sponsorship of workshops and the preparation of radio and TV spots, would henceforth be left to the local areas. In his message, Mr. Frantz stated that the NLW program

had been extraordinarily successful in doing what it set out to do and much, much more than was ever imagined when it was begun. In the public sector, it has altered the image of libraries and librarians, helped to re-interpret them in the light of present-day needs and standards; and helped enormously to raise public expectations of what libraries should be able to offer.

Beyond these successes, perhaps the greatest accomplishment of NLW has been to awaken the library profession in general to the importance of communicating effectively its goals and programs to its public. In the words of one ALA member who responded to the 1972 evaluation committee's request for opinions on NLW: "The price we will pay for complacency and the conduct of business as usual will be oblivion. . . . If ever libraries needed to tell their story well, that need exists now."

National Library Week headquarters: c/o American Library Association, 50 East Huron Street, Chicago, Ill. 60611.

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GLORIA HASTINGS

THE NATIONAL REPROGRAPHIC CENTRE FOR DOCUMENTATION (NRCd)

The National Reprographic Centre for documentation—generally referred to as NRCd—is a British National Centre concerned with all matters relating to the applications and technology of micrographic, reprographic, and other "new media" for the written word. Historically the emphasis of much of the center's work has been concerned with microforms. NRCd was originally established in the mid-1960s under the terms of a British government research grant. The NRCd continues to receive support for its research activities from funds provided by the British Library Research and Development Department; it has additionally developed an extensive program of publications and user services which are supported by a rapidly growing and worldwide list of subscribing organizations.

In the research field, the center has carried out a number of projects concerned with equipment design and user needs, applications, and state-of-the-art studies. The results are published as monographs. A major byproduct of the center's equipment studies is the regular series of equipment evaluation reports issued by the NRCd and distributed to Reports Service Subscribers as part of the service.

The NRCd information and advisory services are dedicated to the provision of information on an impartial basis, independent of commercial factors. The information service is based on batches of abstracts appearing in each issue of the center's journal, *Reprographics Quarterly*, and supported by a collection of complete texts on microfiche.

The center runs a regular program of short courses in both reprographics and micrographics. Formal lectures are supported, where necessary, by practical work in well-equipped demonstration rooms.

The center's prime publication is *Reprographics Quarterly*, issued on the first of April, July, October, and January each year. The contents include review columns on new developments, micropublishing, copyright, and standards. Also included are reviews of new items of equipment and summaries of the full equipment evaluation reports. Major authorities are commissioned to contribute papers. Longer contributions appear in a series of monographs entitled *Occasional Papers*.

Membership of the NRCd is open to organizations and individuals throughout the world on a three-tier subscription structure: *Reprographics Quarterly* only at £8.00 ($20.00) per year; access to the enquiry and information services is provided via the "Basic" service at £14.00 ($34.00) per year; while a "Reports" membership at £30.00 ($72.00) per year provides for the free supply of Equipment Evaluation Reports. A substantial part of NRCd membership is outside the United Kingdom, and *Reprographics Quarterly* is published with summaries in French and German in addition to English. The address of the center is as follows: NRCd, The Hatfield Polytechnic, Endymion Road Annexe, Hatfield, Herts AL10 8AU, England.

<div align="right">B. J. S. WILLIAMS</div>

NATIONAL SCIENCE FOUNDATION — SCIENCE INFORMATION

The role of the National Science Foundation in scientific and technical information activities is unique among Federal Executive Branch research and development agencies. Although it has supported, through grants and contracts, the development and operations of library and scientific and technical information centers, it has never assumed direct responsibility for the operation of an information facility other than its own agency library.

When the National Science Foundation (NSF) was established in 1950, Congress included the following statements in the enabling legislation (*1*): Section 3(a),(3) ". . . foster the interchange of scientific information among scientists in the United States and other countries," and in Section 11(g) ". . . publish or arrange for publication of scientific and technical information so as to further the full dissemination of information of scientific value, consistent with the national interest. . . ."

When, in 1952, the NSF began to operate, it established the Office of Scientific Information (OSI) with Robert Tumbleson as head. OSI was part of NSF's Public Information Office.

Early Programs

Between 1952 and 1955 the foundation supported a few activities in science information such as: (1) publication support for scientific books and journals; (2) translation of Soviet books and journal articles; (3) symposia on Soviet science; (4) study of methods and procedures to get information to scientists in industrial and research laboratories at the request of the Armed Services Technical Information Agency (ASTIA) and the Office of Technical Services (OTS); (5) support of a few investigators working on scientific information problems—among these was linguistics, with the purpose to use machines in translation from one language to another; (6) aid to Biological Abstracts to update its indexes; and (7) a study of biological bibliographic tools by H. Bentley Glass of Johns Hopkins University. It is interesting to note that each of the above represent areas in which NSF later established support programs.

In October 1955, the National Science Foundation expanded the OSI program when Alberto Thompson became head. OSI organized programs for Publications Support and Scientific Documentation with Helen Brownson as director, Foreign Science Information with Ralph O'Dette as director, and U.S. Government Research Information with Dwight E. Gray as director. In addition the office of the head of OSI initiated a program of exhibits under Thomas O. Jones, who was special assistant to the head.

During the next 2 years, OSI concentrated on the following support activities:

1. Became the coordinator for U.S. science exhibits for the World's Fair to be held in Brussels, Belgium in 1958
2. Mounted an exhibits program to inform the public on satellites and their possible uses
3. Expanded support for translations; including support of the Special Libraries Association's Translation Center in the John Crerar Library in Chicago
4. Continued support of scientific publications including journals, state-of-the-art reviews, and the Conference of Biological Editors
5. Supported investigators looking into
   a. new methods of journal publication
   b. improved classification and indexing for use with computers
   c. language structure and meaning for possible use in machine translation
   d. information uses of scientists and engineers
6. Expanded the U.S. Government Research Information program which acted as a referral center as well as preparing bibliographies
7. Initiated the planning, in cooperation with the American Documentation Institute and the National Research Council of an International Conference on Scientific Information to be held in November 1958

In 1957 two unrelated events made a big impact on NSF/OSI. The first was the untimely death of Alberto Thompson, who had barely started to develop a vigorous scientific information support program. Second, the launching of Sputnik surprised most Americans.

Congress asked the Federal Research and Development agencies, including the NSF, why the Soviet capability in rocketry had not been foreseen. Congress particularly wished to know why the U.S. scientific and technical information services were not able to forecast such an event. During this period of almost hysteria, Burton W. Adkinson became the head of the Office of Scientific Information.

Congress, without bothering to hold hearings, included Title IX in the National Defense Education Act, which became law in October 1957 (2). This Title IX called for the establishment of a Science Information Service in the National Science Foundation to

> . . . provide or arrange for the provision of, indexing, abstracting, translating, and other services leading to a more effective dissemination of scientific information, including mechanized systems for making scientific information available.

Following the launching of Sputnik, the President's Science Advisory Committee began to review the science information activities in the government. Early in 1958 the President's Science Advisory Committee formed a panel to investigate the U.S. science information activities, with the purpose to recommend federal government action in this field. Alan T. Waterman was named chairman of the panel. Very soon it became apparent to the panel that NSF would be involved in its recommendations, therefore, Dr. Waterman, who was director of NSF, resigned as panel chairman and William O. Baker of Bell Telephone Research Laboratories was selected in his place. The panel—after hearing testimony from representatives of federal libraries and other information agencies, responsible officials of scientific societies, and commercial publishers; reviewing information on foreign countries' information activities; and studying data on scientific and technical publishing, abstracting, and indexing—presented its recommendations to the President's Science Advisory Committee (PSAC) in December 1958 (3). PSAC endorsed the panel's report, and the President's Special Assistant for Science and Technology, James R. Killian, Jr., recommended its approval by President Dwight D. Eisenhower. The White House Press Release of December 7, 1958 summarized the recommendations:

> . . . The President directed that the National Science Foundation take leadership in bringing about effective coordination of various scientific information activities within the Federal Government.

Also the press release indicated the administrative and policy actions that would be implemented:

> Today's action by the President strengthens and reinforces the provisions of the National Defense Education Act of 1958 (NDEA 1958) calling for the estab-

lishment of a Science Information Service in the National Science Foundation . . . The Committee urged that the fullest use be made of existing information services, both public and private, and that the Foundation's Science Information Service supplement rather than supplant present efforts.

The National Science Foundation responded to the above presidential directive on December 11, 1958 by establishing the Office of Science Information Service (OSIS) with Burton W. Adkinson as the head. In addition, the foundation announced the formation of a Science Information Council to ". . . advise, consult with, and make recommendations to the head of the Science Information Service" in compliance with a provision of Title IX of the NDEA of 1958.

The first meeting of the Science Information Council was held on February 2, 1958, at which William O. Baker was elected chairman.

The President in March 1959 issued an amended Executive Order 10521 which stated:

The National Science Foundation shall provide leadership in the effective coordination of the scientific information activities of the Federal Government with a view to improving the availability and dissemination of scientific information. Federal agencies shall cooperate with and assist the National Science Foundation in the performance of this function, to the extent permitted by law.

Prior to the issuance of this Executive Order, the NSF took another administrative action to strengthen coordination and cooperation among federal agencies by appointing a Federal Advisory Committee on Scientific Information (FACSI), which consisted of 18 representatives of research and development agencies and the Library of Congress. FACSI was to consult with and advise the head of OSIS on the development of policies and programs designed to coordinate federal scientific information activities.

One should recall the almost hysterical atmosphere that was extant when OSIS was formed. During the 1950s Americans were led to believe that the U.S. was the world's leader in most fields of science and technology. The federal government was making plans to launch a satellite and U.S. research and development was expanding rapidly. The electronic computer was becoming available for a wide variety of uses. Rapid advances were being made in microphotography and in methods to quickly and easily reproduce facsimile copies. Innovations in telecommunications were appearing in rapid succession. Offset printing was replacing hot type methods. Then the Soviets announced the successful launching of Sputnik! To add to the concern of U.S. citizens, information, some of it erroneous, was circulated that the Soviets had a large, centralized, and advanced mechanized scientific and technical information center, the All-Union Institute for Scientific and Technical Information (VINITI). Also, in 1957, the Japanese announced the formation of a large scientific and technical information center, the Japanese Information Center for Scientific and Technical Information (JICST).

The American public, as well as Congressional and Executive Branch Offices,

was anxious for actions that would demonstrate that the U.S. had not lost its leadership in science and technology.

During the next few years, many investigations were made to determine what the United States should do to improve its scientific information services. Also a number of proposals were put forward which purported to solve the U.S. scientific and technical information problems.

One of the most extensive series of hearings was chaired by Senator Hubert H. Humphrey, chairman of the Senate Subcommittee on Reorganization of the Senate Committee on Government Operations. These hearings began in 1959 and continued through part of 1960 (4). Although no legislation resulted from the hearings, Senator Humphrey was able to impress most federal research and development administrators that they should initiate actions to improve the scientific and technical information services that supported their research and development programs. His hearings also stimulated U.S. scientific and technical societies to review and improve their primary publications and abstracting and indexing services. There were several other Senate and House of Representatives investigations but none of these resulted in specific legislation.

Many individuals and groups suggested methods for improving the scientific and technical information services in the United States. These ranged from the decentralized approach made by the President's Science Advisory Committee chaired by William O. Baker in 1958, to a National Library of Science suggested by Stafford Warren, the President's Advisor for Mental Retardation. Each of these investigations and proposals had to be reviewed and analyzed by the Science Information Council and the OSIS.

Between 1958 and 1964 the NSF was responsible for fostering cooperation among scientific and technical information organizations. Among the actions that the National Science Foundation took during this period were:

1. Established the Federal Advisory Committee for Scientific Information in 1958—this committee was abolished in 1961 when President Kennedy eliminated all federal committees deemed not essential to research and development. FACSI did recommend a government policy for honoring page charges by scientific journals, which was adopted by the federal government.
2. Funded the National Bureau of Standards Research Information and Advisory Service on Information Processing.
3. Developed a coordinated federal translations program for use of U.S. surplus foreign credits under the PL 480 amendment of 1958.
4. Funded the Library of Congress's National Referral Center for Science and Technology.
5. Funded the Special Libraries Association's Translation Center and the Office of Technical Services in their cooperative program to acquire, announce, and make available translations of foreign-language journals and monographs.
6. Supported the establishment and operations of the Office of Critical Tables in the National Research Council, which coordinated the U.S. efforts in the development of standard reference data in the physical sciences.
7. Encouraged and supported the National Research Council to establish and maintain the Office of Documentation.

8. Participated in the planning of and partially supported the International Conference on Scientific Information in November 1958.
9. Supported the Mid-West Interlibrary Center, a cooperative venture of 17 midwest universities, in collecting and announcing scientific journals in selected fields.
10. Supported the establishment of a central office of the National Federation of Science Abstracting and Indexing Services.
11. Funded the central office of the American Documentation Institute.
12. Assisted financially the Association of Research Libraries to establish a central office in Washington, D.C.
13. Underwrote the cost of the Heller Report (5), which outlined a national plan for science abstracting and indexing services.
14. Organized the Scientific Information Committee of the Pacific Science Council and planned a program for the Pacific Science Congress of 1960.
15. Funded the Council of Biological Editors' meetings, as well as a project to produce a style manual.
16. Coordinated the efforts of U.S. organizations in the production of the U.S. Science Exhibit at the World's Fair in Brussels, Belgium in 1958.
17. Gave support to international organizations such as the International Federation for Documentation and the Abstracting Board of the International Council of Scientific Unions.

Among the activities supported by NSF to improve science information services during this 6-year period were:

1. Supported translations projects of more than 50 scientific societies and universities that resulted in 100 English-language versions of foreign journals and the translation of numerous monographs.
2. Gave assistance to scientific and technical organizations such as Chemical Abstracts, Biological Abstracts, American Mathematical Society, American Meteorological Society, American Society for Metals, Special Libraries Association, the American Documentation Institute, the American Institute of Biological Sciences, and the American Institute of Physics to improve their services or to initiate new ones.
3. Supported the Office of Technical Services in the establishment of regional depositories for federal government scientific and technical reports and translations.
4. Contributed to the operational cost of the Bio-Sciences Information Exchange, which was an inventory of current research projects that was heavily used by grants administrators both within and outside the government.
5. Took the leadership in expanding the Bio-Sciences Information Exchange into a Science Information Exchange which would include all physical, life, mathematical, and some social sciences. Also, in 1963 assumed financial responsibility for the operations of the Science Information Exchange.
6. Supported the Library of Congress in the preparation of indexes, bibliographies, and directories.
7. Cooperated with the Council of Library Resources in funding the expansion of activities of Committee Z39 of the American National Standards Institute, which developed standards in the field of library and information sciences.
8. Provided funds for many new services such as
   a. the *Journal of Wildlife Diseases*, which is published only in microfilm form

b. the *Permuted Title Index (BASIC)* of Biological Abstracts
c. *Chemical Titles*, by Chemical Abstracts Service
d. citation indexing experiment in the field of genetics by the Institute for Scientific Information. This established the data base from which *Science Citation Index* was started
e. *Physics Review Letters*, by the American Physical Society.

In another support category, the Office of Science Information Services was the major supporter of projects in research and development in library and information sciences. This statement is based on a count of projects listed in *Current Research and Development in Scientific Documentation* (6). Among the projects were a number investigating various facets of linguistics as it related to documentation. The result of OSIS and other federal agencies' support led to the development of computational linguistics. In 1964 OSIS turned over to the NSF Division of Social Sciences all research projects in this field and concentrated on experiments to use the results of these findings in improving the organization and searching of bibliographic data bases.

Another prominent area of investigation during this period was support of projects to produce data on the patterns of use of information by scientists and engineers. The NSF funded investigators at Case Institute of Technology, Columbia University, the University of Pennsylvania, and Harvard University.

An excellent summary of research and development in library and information sciences from 1957 to 1968 is Harold Wooster's article, *Current Research and Development in Scientific Documentation*, published in Volume 6 of this encyclopedia (7).

One of the significant factors in the development of the scientific information field during this 7-year era was the rapid increase in funds. As far as I have been able to determine, there are no reliable data for total expenditures in the U.S. during the period, 1957 to 1964. However, the growth of the OSIS's financial resources during this interval does give some indication of the expansion of support. In fiscal year 1958, OSIS obligated $1.9 million, of which $0.4 million went for research on scientific information problems, $0.8 million was allocated to translations and other projects to increase the availability of foreign science information, and $0.6 million was provided for support of scientific publications and reference tools. In fiscal year 1964, OSIS obligated $10 million—a fivefold increase over fiscal year 1958.

These funds were apportioned as follows:

$1.3 million for research and studies
$2.5 million for information systems development
$4.0 million for publication support
$1.3 million for support of the Science Information Exchange and other science information activities in the federal government
$0.7 million for activities to improve the availability of foreign science information
$0.1 million for work on numerical data problems and miscellaneous activities not falling into the above categories

The NSF estimated that in fiscal year 1965, the federal government obligated over $186 million for scientific and technical information activities. These figures do not include estimates for collection, organization, analysis, and dissemination of numerical data required by scientists and engineers.

Although the review and justification of project proposals are important tasks of the staff of OSIS, there are many other activities that require these persons' attention. A significant fraction of time is spent on the preparation and defense of the annual budget requests. One often does not realize that the competition for funds among various activities is very keen. Allocations for funds to support science information activities must compete with all other NSF programs, as well as be justified to the Office of Management and Budget and the several congressional committees which have responsibility for authorization and appropriation of NSF budget requests.

A considerable portion of the OSIS staff's time was spent during this 7-year period on the preparation of the office's publications. Bernard Fry was the originator and was responsible for the production of *Science Information Notes* (*14*). Helen Brownson and her staff prepared *Current Research and Development in Scientific Documentation* (*6*). Madeline Berry Henderson, a member of Helen Brownson's staff, was responsible for *Nonconventional Scientific Information Systems in Current Use* (*15*). These three publications proved useful in providing information to the scientific information community on the on-going scientific and technical information activities.

Another significant portion of staff time was spent designing studies to develop data on scientific and technical information programs and activities. Among these were a list of Russian-language journals prepared by the Library of Congress, studies on primary publication in the United States, brochures on the scientific and technical information activities of federal agencies, and a publication listing specialized information services in the United States.

Moreover the staff participated in formal and informal meetings which reviewed problems in scientific and technical information, such as:

1. The discussions that led to the establishment of the Conference of Biological Editors, and the National Federation of Science Abstracting and Indexing Services

2. Meetings of investigators working on mechanical translation and computational linguistics

3. Meetings that led to the establishment of a secretariat and headquarters of the American Documentation Institute, the Association of Research Libraries, and the Z39 Committee of ANSI

4. Meetings of international organizations in the documentation field, for example
   a. Meetings that led to the reorganization and preparation of a program of the Abstracting Board of ICSU
   b. A working party of the Organization for Economic Cooperation and Development that led to the establishment of its Information Policy Group
   c. Sessions of the International Federation for Documentation that prepared a reorganization plan and a program of short-term and long-range activities

d. Meeting of representatives of international nongovernmental organizations with UNESCO that encouraged UNESCO officials to establish a science information unit in its science directorate

Federal Government Actions Affecting OSIS's Role

Between 1961 and 1964 the Executive Branch took actions that significantly affected the role of NSF in the science information field. First, the President's Special Assistant for Science and Technology appointed a person to his staff to monitor and stimulate cooperation among the federal scientific and technical information agencies. The first of these, J. Hilary Kelly, was appointed in 1962 by Jerome Wiesner. Later in 1963, Donald Hornig named William Knox as a technical assistant with the same responsibility. In order to clarify the coordination of responsibilities between the Office of Science and Technology in the Executive Office of the President and the National Science Foundation, Donald Hornig, as Director of the Office of Science and Technology, and Leland Hayworth, Director of the National Science Foundation, reached an understanding that was incorporated in a letter early in 1964 from Dr. Hornig to Dr. Hayworth:

> . . . The National Science Foundation shall provide leadership in effecting cooperation and coordination among non-federal scientific and technical information services and organizations, and in adequate relationships between federal and non-federal scientific information activities. The Office of Science and Technology, with the assistance of the Federal Council for Science and Technology, shall provide over-all leadership of all Federal scientific and technical activities, including the above. . . .

Thus, from 1964 until 1971, NSF/OSIS had no leadership responsibility for effecting coordination and cooperation among federal scientific and technical information activities and agencies.

Another federal mechanism which affected OSIS's role was the establishment in 1961 of a committee of the Federal Council for Science and Technology, the Committee on Scientific Information (COSI), which in 1964 was renamed the Committee for Scientific and Technical Information (COSATI). This committee was the forum for discussion of federal agencies' proposed information programs which would affect other federal information agencies. For example, the proposal to enlarge the Bio-Sciences Information Exchange to the Science Information Exchange was reviewed by COSATI, which recommended approval. The National Bureau of Standards presented its plan to initiate the Standard Reference Data Service to COSATI, and the change in name and program orientation from the Office of Technical Services to the Clearinghouse for Federal Scientific and Technical Information (CFSTI) was presented to COSATI. COSATI also established many panels and working groups to look into and recommend on problems in the federal science information activities, and to propose courses of action that would improve coordination and cooperation.

The 1965–1971 Period

Between 1957 and 1964, OSIS supported projects based on individual merit. By 1963 the OSIS staff became concerned about the lack of planned programs for development of scientific society information systems and the coordination of these systems into a compatible national network. This uneasiness was expressed to the scientific and professional societies who were responsible for large, discipline-oriented information service. In 1964 the OSIS announced that it would favor proposals that were part of a systems development program. Also, OSIS indicated it would be receptive to proposals for funding systems studies and the development of an information system program.

In addition OSIS wished to encourage planned research programs at universities rather than allocate all its research funds to the support of individual research proposals. These policy decisions led to a marked change in the OSIS support pattern.

In order to facilitate the review of proposals and the administration of grants and contracts, the office organized the following program staffs:

1. Research and Studies Program, Helen L. Brownson, Director
2. Information Systems Program, Richard See, Director
3. Publications Support Program, Ernest R. Sohns, Director (this program included support of translations by U.S. organizations and monitoring translation projects in foreign countries that were supported with U.S. surplus foreign credits)
4. Data Collection and Publication Unit, Ralph H. Sullivan, Head (this unit was responsible for OSIS publications as well as collection of fiscal data on U.S. government expenditures in scientific and technical information activities)
5. Federal Science Information Program, Seymour I. Taine, Director (this program monitored information projects in other federal agencies that were supported by NSF)
6. Domestic and Foreign Science Program, Arthur J. Shanahan, Director (maintained liaison with foreign and domestic organizations with scientific and technical information programs)

In 1965 the American Chemical Society (ACS) submitted to NSF a proposal for a 5-year multimillion dollar project for the design and development of an advanced information system. The proposal was reviewed by several federal agencies. In a meeting chaired by Donald Hornig, chairman of the Federal Council for Science and Technology, it was agreed that the ACS proposal should be funded. OSIS was designated as the contracting agency, with the Department of Defense (DOD) and the National Institutes of Health (NIH) contributing part of the funds. An interdepartmental monitoring committee was organized. At the end of the first year, DOD and NIH withdrew their support since the Chemical Abstracts Service (CAS) systems design did not include elements which these agencies felt essential for the support of their research and development programs. During the review of the proposal, both CAS and OSIS stressed that this systems program would require large federal subsidy for about 10 years.

Between 1965 and 1971, the CAS developed an integrated system that produced a wide variety of information products that were available in both printed and magnetic tape formats. Several foreign countries—United Kingdom, Sweden, and Japan—cooperated with CAS in testing these new information products. At the end of this 6-year period, CAS was still developing some elements of its integrated system. It also was cooperating with Biological Abstracts and Engineering Index in a program to improve coordination among the three systems. In addition, CAS personnel were working with the ICSU Abstracting Board and the UNISIST program of UNESCO to establish standards and procedures that would allow better transfer of information from one computer-based system to another.

After the American Chemical Society submitted its proposal, the American Institute of Physics, the American Geological Institute, and the American Psychological Association submitted proposals for systems design and development programs. Each of these was supported by NSF. By 1971 each of these organizations was well along in the development and operation of a computer-based bibliographical information system.

A more detailed description and analysis of the OSIS systems development program is given in Douglas E. Berninger's "Strategic Planning and Decision Making in a Federally Funded Science Information Program" (8).

During the same period, OSIS supported experiments at universities such as the University of Georgia and the Illinois Institute of Technology Research Institute, to demonstrate that effective subject searches could be made on several of the magnetic tape data bases being produced by a number of federal and private information organizations.

Earlier mention is made of OSIS's interest in encouraging planned research programs in the information sciences. Two projects were initiated. In 1967, Georgia Institute of Technology submitted a proposal for a graduate program of education and research in library and information sciences. This proposal was funded by NSF and V. Slamecka was appointed to develop the program. During the same year, Ohio State University initiated a research and education program in information and computer sciences under the direction of Marshall Yovits and submitted a proposal for support of the program to NSF, which was funded.

The sponsoring institutions and OSIS were interested in achieving three objectives with these planned research programs. First, it was hoped that these university centers would cooperate with nearby information services in working on problems facing these services; second, that a group of research-oriented information scientists would be attracted to these institutions, who would develop a planned research program; third, these scientists would train young specialists who would add to the limited pool of such specialized personnel. It was hoped also that these three centers would encourage other universities to develop similiar programs.

By fiscal year 1969 these three programs were using 50% of the OSIS funds. This is in contrast to 1965, when the information systems program was allotted 16% of the office's funds and in that year no funds were expended on university-centered research programs.

One might question the marked change in the OSIS funding pattern during this

period. The reasoning of OSIS was that the large, discipline-oriented information systems were essential to U.S. research and development activities, and the society sponsors were in no position to expend the large sums necessary to plan and develop these complicated bibliographical data bases.

OSIS felt reassured in this program orientation as it was approved by the Science Information Council, the National Science Board, and up to 1969 by the Bureau of the Budget. After 1969 the Bureau of the Budget expressed reservations because of the high development cost of these large computerized systems.

In spite of the large allocations of funds to systems development and university research programs during this period, OSIS, according to a count of projects in *Current Research and Development in Scientific Documentation,* supported more research and development projects in information sciences than any other federal agency. OSIS also was the major source of federal funds for nonfederal scientific publication and translation.

The National Science Foundation, from its beginning, maintained an interest in studies and research that would develop data on information uses and needs of scientists and engineers. One of NSF's early grants was made for such a study. During the period under review, OSIS continued to support proposals in this area. These projects approached this problem from a number of angles, such at T. Allen's study of information flow in research and development projects; Westat, Inc.'s study on the economics of information; the Institute of Scientific Information's study of the overlap among the abstracting and indexing services and its experiment with citation indexing for scientists doing research in genetics; and MIT's Project Intrex which experimented with the use of consoles and other mechanisms for access to scientific information. Each of these projects added to the understanding of the flow and use of information, but at the end of this period there were many unresolved problems regarding the flow and use of information by and among scientists and engineers.

As a member of the federal community of science information agencies, OSIS funded a number of studies of interest to the federal agencies. Among these were the System Development Corporation's study of abstracting and indexing services (9), the National Academy of Sciences–National Research Council's study entitled *Scientific and Technical Communication—A Pressing National Problem* (10), and Science Communications Inc.'s study of projects for collection and analysis of numerical data used in research and development. It also assisted in support of the Library of Congress and the Association of Research Libraries project to develop a plan for a national serials data program.

Near the end of this period, a number of actions were taken that significantly changed the character of the NSF program in science information.

The Period of Change—1971 to 1975

The funds allocated to OSIS for fiscal years from 1966 to 1971 remained at a level near $10 million annually. In the succeeding fiscal years, the annual allo-

cations were reduced rapidly, until in 1974 they were about $5 million. This drastic reduction forced OSIS to eliminate some support programs and to severely reduce others. In 1971 the Office of Management and Budget indicated to NSF that it would not approve funds for discipline-oriented information systems after fiscal 1974 and requested NSF to phase out this program.

Earlier in 1969, the OSIS was placed under the administrative and policy direction of the assistant director for National and International Programs. Prior to this date OSIS reported to the director or the deputy director of the NSF. In 1970 the assistant director for National and International Programs assumed responsibility for presenting the programs and budgets of his directorate to the National Science Board, the Office of Management and Budget, and congressional authorization and appropriation committees. These administrative moves denied the OSIS, as well as other offices in the Directorate for National and International Programs, the opportunity to explain and justify program plans and budget estimates to the governmental bodies who had the authority to approve programs and budgets.

Between 1971 and 1973 OSIS experienced a rapid change in personnel. In January 1971 Burton W. Adkinson retired from federal government service and became director of the American Geographical Society. Later that year Melvin Day became head of OSIS but transferred early in 1973 to the National Library of Medicine as deputy director. Lee Burchinal was then selected as head of OSIS. The staff of OSIS was drastically reduced during this 2-year period.

In addition to the above fiscal, administrative, and personnel changes, OSIS was faced with pressure to develop support programs that would foster improved information services in multidiscipline fields such as environmental quality and energy resources. There was increased pressure on OSIS to stimulate faster integration and coordination among federal and nonfederal information systems so they could serve better the research and development activities oriented toward solving national problems.

An Executive Branch decision in 1971 added another burden on OSIS—the responsibility for the Committee for Scientific and Technical Information was transferred from the Office of Science and Technology in the Executive Office of the President to the National Science Foundation and this responsibility was placed in OSIS. The head of OSIS became the chairman of COSATI and the reduced staff of OSIS had to assume the secretariat work for this interdepartmental committee.

In 1974 two other federal government actions affected OSIS. First, COSATI was abolished and, second, the legislative authority for the Science Information Council in Title IX of the National Defense Act of 1958 was allowed to lapse.

Faced with the above changed conditions as well as other pressures, the head of OSIS, Lee Burchinal, prepared in 1974 a statement (11) on new directions for OSIS, part of which is quoted below.

. . . Most of the OSIS budget was committed to supporting a small number of large multi-year projects, for example, of 200 multi-year projects supported by OSIS, seven in the years between FY 1969 and FY 1973 consumed 50 percent of the OSIS annual expenditures.

While OSIS support has helped to create the most advanced science information systems in the world, the size, complexity, and diversity of systems and services today demand a different kind of Federal commitment to science communication.

Current Problems

Typical of the important problems facing science communications today are:

Inadequate means for coping with the steadily increasing rate of scientific publication—the literature growth rate has been about eight to ten percent per year for the past several decades, but OECD estimates suggest a four-to-seven-fold increase by 1985.

Abstracting and indexing services are falling behind in coverage of the world's literature—the mean growth rate of these services is under four percent, but the literature rate of growth is conservatively twice that figure. In addition, inflationary forces are cutting into productive capacity.

Generation of numerical data is exceeding critical analysis and dissemination processes—the volume of published numerical data comprises 15–20 percent of the literature and is growing in direct proportion with that literature, while large but unknown amounts of data are being collected and stored in data banks.

Poor communication exists between information suppliers and users—users, libraries, and information centers must keep abreast with the information products and services of thousands of suppliers in Federal agencies, scientific and technical societies, and for-profit firms. Moreover, they are confronting a much wider diversity of materials, including printed matter, computer tapes, microfilm, audio-visual materials, etc.

The cost of materials continues to rise—scientific publishers and abstracting services have repeatedly raised prices in recent years; prices for chemistry and physics journals, for example, increased 86 percent between 1967 and 1972.

A large and diverse population of users must be served—one estimate indicates a 20 to 30 percent increase in scientists in the next decade; and more people in business, industry, and government are becoming secondary users of scientific and technical information.

A pressing need has emerged for cross-disciplinary information systems—Federal information systems are designed to meet mission requirements, while those of scientific and technical societies are designed to support specific disciplines. Consequently, in broader areas like environment or energy we are not equipped to meet new information needs.

Emerging technologies and networking are forcing major system changes—while the strong trend toward resource sharing among libraries, information centers, and universities offers great promise, there are serious questions as to how networks will ultimately affect the economic balance existing between information suppliers and users.

The effects of information on national productivity are poorly understood analytically—if nearly 40 percent of the Gross National Product can be ac-

counted for by the production, distribution, and use of knowledge, as some estimates indicate, increasing productivity in the U.S. depends greatly upon more efficient and effective application of available knowledge.

New Directions

The problems mentioned above have exposed serious deficiencies in our present system of science communication. As a result, costs for many services are unnecessarily high, and frequently users are unable to find the information they need. We lack a national strategy for attacking the Nation's science information problems systematically. By redirecting its programs, OSIS hopes to "spearhead" the development of such a strategy.

The "new" OSIS program is aimed at stimulating improvements in the scientific and technical information transfer process, and consists of three inter-related parts:

Research and development—to stimulate needed cost/effective and innovative improvements;

Leadership activities—to promote the application of information retrieval research and development results and the introduction of related promising improvements; and

Coordination among Federal and private services—to foster standards, minimize duplication of effort, and simplify user access.

Research. No longer will major support be provided for establishing, maintaining, or expanding specific information services. OSIS funds, instead, are being used to produce generalizable results that can help improve methods of acquiring, transmitting, retrieving, and using information in any scientific or technical area. OSIS activities are designed to advance the state of the art in science communication. Furthermore, OSIS support is limited to efforts that will serve the public interest and that are not supportable by other public or private organizations. Although unsolicited proposals are welcomed and reviewed on their merits, proposals aimed at specific OSIS research objectives are being especially encouraged.

OSIS research goals and objectives are being widely disseminated to assist researchers in targeting their proposals to recognized problems. Also, OSIS has released a program solicitation for FY 1975 and has issued several requests for proposals.

Leadership. OSIS will exercise its leadership in two ways. First, it will actively disseminate information about its research in progress and completed research. Second, OSIS hopes to help shape national directions by initiating planning conferences involving relevant Federal agencies and other public and private groups.

Coordination. Fundamental, long-term improvements in information transfer, however, require new initiatives that are beyond OSIS's present capabilities. For this reason, OSIS has proposed forming a new science information advisory body to fill the void created by the demise of COSATI and the expiration of the Science Information Council. The advisory group would work with OSIS to coordinate key science information programs and to develop a common set of research goals and objectives for long-term communication improvements.

Substantial improvements in our information systems cannot be attained by edict. But through *research, leadership,* and voluntary *coordination* OSIS believes that national objectives in this area can be achieved. No national plan is being proposed, as in the United Kingdom, Canada, West Germany, Japan, the U.S.S.R., and some other countries. Rather, OSIS is attempting to set in motion integrating actions, based on guidance derived from research.

The next section sets forth the conceptual framework for the new OSIS program plan and elaborates OSIS research and development objectives.

Conceptual Framework for Science Information R&D

Information services are not ends in themselves; they are means to the broader end of helping individuals and organizations to attain their goals and to improve their performance. Information services do this by helping individuals work more productively through use of all relevant available knowledge.

Productive use of information rests upon two sets of conditions; (1) time, assured access to needed information, preferably at one's place of work; and (2) an environment that promotes effective use of the retrieved information. These conditions, however, cannot be achieved unless we improve our management of the flow of information from thousands of points of origin to the even more numerous points of application.

OSIS Role

OSIS is in a unique position to provide data and guidance for improving the management of R&D results because (1) it does not operate any system and has no vested operational interests; and (2) it is charged by Congress to improve science communication. Consequently, beginning in FY 1975, OSIS will structure its research and development program in such a way that its results can help improve the overall management of scientific and technical information services in the United States. In addition, the program is designed to facilitate improvements in *access* to, and *use* of, R&D results . . . three criteria [are] being used to assess the effectiveness of information systems. . . . These are (1) enhancement of organizational performance, (2) cost-effectiveness and (3) user-responsiveness to services. The output of the new OSIS research and development program will be measured against these criteria. . . .

Considerable investment—far beyond the resources available to OSIS or any other organization—will be required to attain these goals. Nevertheless, by offering a comprehensive set of goals for achieving significant gains in scientific and technical communication, OSIS hopes to stimulate national debate on issues involved. Results of the debate may include consensus on certain critical issues and directions (goals) for national improvements. With such agreement, OSIS will be better able to stimulate R&D on critical national science information problems, to promote effective coordination among public and private services, and to accelerate the application of tested improvements in science communication. OSIS is committed to building this kind of partnership with the Nation's major scientific and technical information services.

Meanwhile, however, OSIS is using the present set of goals to guide solicitation, review, and monitoring of proposals and projects.

The following three sections present goals for each of the three areas—management, access, and use—of scientific and technical information.

GUIDANCE FOR IMPROVED MANAGEMENT OF INFORMATION

The aim of research in this area is to produce data and knowledge that can be used to improve methods for transferring, accessing, and using scientific and technical R&D results. Research is needed to illuminate present and near-future options for improving distribution, access, and use functions; for facilitating short-run improvements; and for identifying promising lines of development for fundamental, long-term advances in services.

In this context, OSIS has established seven goals, the achievement of which will provide guidance for improving the management of scientific and technical

information in the United States. Foremost is the need to measure benefits from information use. Without hard data on the value of information services, alternatives cannot be assessed and managers are unable to make cost/effective decisions. Closely related is the need to provide managers of services—the suppliers or distributors—with data to help them design and market those products and services for which there is high demand. The purpose is to facilitate emergence of user-responsive, innovative, and economically viable services based on advanced state-of-the-art methods. Therefore, a third aim is to support development of new theoretical approaches and models for advanced information transfer systems. Such research is being developed in ways to strengthen information science as a scientific discipline and to foster generation of new hypotheses and theories in the field of information.

The recent energy crisis demonstrated how poorly scientific and technical information is organized. Consequently, using the energy R&D field as a test case, OSIS has set as a fourth goal- -the testing of new methods for mobilizing scientific and technical information to meet national needs. Expanding the requirements for coordination, OSIS has set as its fifth goal improving coordination among the public and private organizations which comprise the Nation's information enterprise. In today's world, however, national coordination must also be viewed in an international context. The sixth goal, therefore, is to examine how U.S. interests can be furthered while they also contribute to international objectives. Finally, if key decision-makers and managers who control the operation of U.S. scientific and technical information services are to benefit from results of OSIS R&D, they must know about these findings. Therefore, OSIS has embarked upon a vigorous dissemination program.

The first set of OSIS goals then are:

(1) *To Measure Benefit from Information Use.* Information managers assert that information services are vital to the advancement of science and technology, but hard data to substantiate this thesis are scarce. High priority, therefore, must be given to developing new methods for measuring the benefits of information services in terms of their positive contribution to decision-making in the scientific, technical, managerial, and policy areas.

Three approaches are being pursued. First, OSIS staff is analyzing the literature. Second, research proposals are being encouraged for the collection and analysis of relevant data. For example, a program solicitation recently issued by the Foundation on science information issues stressed this need. Third, the topic is under study in a cooperative project with the U.S.S.R.

(2) *To Provide Guidance for Improved Management of Scientific and Technical Information Services.* In this area, studies and experiments focus on generating reliable data on cost-effectiveness and user-responsiveness of information services and guidelines for actions for assuring their economic viability. Particular attention is given to organizing data on production, flow, use, pricing and marketing of scientific and technical information. Part of this work is cooperative with the Office of Exploratory Research and Problem Assessment of the Research Applications Directorate and with the Division of Science Resources Studies of the Education Directorate.

(3) *To Strengthen Information Science as a Scientific Discipline.* Research on fundamental information science issues constitutes the most basic work supported by OSIS. Two major lines of activity are being explored. One consists of research on basic information science problems and the formulation of theories and mathematical models for information transfer. The other focuses on applied research

to convert basic findings into prototype developments. Some cooperative work in this area is being conducted with the Office of Exploratory Research and Problem Assessment of the Research Applications Directorate.

(4) *To Mobilize Existing Information Resources to Meet Emerging National Needs.* New methods for organizing energy R&D information are being studied. The purpose is not only to help meet immediate needs for energy R&D information, but also to learn how to mobilize information resources to meet future critical needs. Specifically, four kinds of research are underway: (1) to aggregate energy R&D information from many computer-based bibliographic retrieval systems into one energy file; (2) to improve the indexing of energy R&D literature by developing common terminology among energy R&D information services; (3) to assess the value of computer conferencing as a technique for rapidly coordinating and mobilizing information resources to meet unanticipated and sudden national needs; and (4) to develop contingency plans for meeting new interdisciplinary information requirements, especially those of decision-makers.

(5) *To Improve National Coordination Among Scientific and Technological Information Services.* This includes provision for assessing the health of the Nation's scientific and technical information enterprise, stimulating communication within the Federal scientific and technical information community and between the Federal and private sectors, and use of an advisory body for encouraging coordination among information services.

(6) *To Increase the Net Return on International Activities.* Here OSIS is seeking to establish performance criteria to help guide U.S. participation in international science information programs. The purpose of activities in this area is to increase the interchange of scientific and technical information between the U.S. and other countries. Major OSIS activities include participation in the world-wide cooperative science information program of UNESCO (UNISIST), and the initiation of a set of bilateral cooperative projects with the U.S.S.R.

(7) *To Promote Use of OSIS-Sponsored Results and Other Innovations.* The OSIS dissemination process begins with an announcement of new awards, followed by the distribution of summaries of all awards made each fiscal year. In addition, OSIS has begun a series of symposia for the analysis and dissemination of research results from OSIS-sponsored research. As part of its leadership function, OSIS also includes dissemination of information about innovations developed with support from sources other than OSIS.

ASSURING ACCESS TO INFORMATION

Timely access to R&D results depends on (1) the availability of information organized in machine-retrieval form and on (2) means for distributing this information to users in their own working environments. The "capture," "distribution," and "presentation" functions rest heavily upon technology. In each case, however, economic, administrative, and use preference issues weigh heavily as well.

Six interrelated goals have been identified for "assuring access" to information. The first is to stimulate publication in machine-readable form. Simultaneously OSIS is pursuing a second goal, the banking of factual data. Together, work toward these two goals will help produce a machine-retrievable record of the results of scientific and technical R&D. Third, for ready access to both literature and data, present abstracting–indexing services have to be extended from their present literature orientation to comprehensive scientific and technical information access services.

Along with organizing information in machine-readable form, attention must also be given to improving capabilities for distributing and presenting information

to users. Therefore, OSIS intends to pursue three additional avenues of work. One calls for stimulating the development of resource-sharing networks capable of delivering data or literature. The second is directed toward arrangements whereby users can direct their own network searches to retrieve needed information. The third is concerned with helping users manipulate and otherwise derive value from retrieved information.

(8) *To Foster Publication in Computer Accessible Form.* Experiments are supported to explore electronic publishing and to find new ways by which small publishers can pool their resources to achieve an operational scale great enough for computerization. Specific research to meet this objective includes testing the operation of a shared editorial processing center serving two or more professional societies; and experimentation with electronic publication to the virtual exclusion of paper or microform publication.

(9) *To Promote the Banking of Factual Data.* Numerical or factual results of scientific observation and measurement must be available for retrieval and presentation in the same way literature is today. To this end, data must be compiled and stored in data banks that are widely accessible to potential users. Three specific sets of efforts are being supported: (1) development of worldwide inventories of major data centers and data banks; (2) encouragement of data management policies that will make data more available; and (3) stimulation of new methods for routinely capturing data in a standard, machine-readable form at the point of publication.

(10) *To Encourage the Abstracting and/or Indexing of New Information.* Work includes demonstrating ways of incorporating data descriptive records into abstracts of scientific publications, extending abstracting and indexing coverage to the contents of data banks, and eliminating unnecessary duplication among abstracting–indexing services in their coverage of primary literature.

(11) *To Foster the Development of Networking among Scientific and Technical Information Services.* In this connection, OSIS is stimulating the evolution of a set of linkages that begins with resource sharing among abstracting and indexing services in the U.S. and that can be later extended to major foreign systems. Network developments will be encouraged in ways to allow for successive incorporation of the output of publishers, data banks and other information producers and distributors. OSIS is not funding the development or operation of networks. Instead, support is limited to facilitating the interconnection of networks in a coordinated and reasonably cost/effective manner. OSIS emphasis, therefore, is directed toward (1) encouraging operational compatibility among services, (2) supporting the development of standards, and (3) facilitating linkages and resource-sharing among suppliers, distributors, and users of machine-based information. This effort is conducted jointly with the Division of Computer Research of the Foundation's Research Directorate.

(12) *To Advance User Control in Finding Needed Information.* Research is probing new methods for searching and extracting information from distant computer files using remote computer terminals. Work is expected to proceed from testing ways to retrieve information remotely from structured files, as an engineering handbook, to retrieval of data and, ultimately, conceptual material from the full texts of documents.

(13) *To Encourage Computer-Aided Usage of Information.* The objective of this research goal is to test the thesis that users can direct searches, locate and manip-

ulate retrieved information, analyze, interpret, compose, and communicate all from the same computer terminal. Specific forms of computer-assistance would include aids for preparing manuscripts, solving engineering design problems, facilitating statistical analyses, and developing planning and policy options. In this instance, activities will be developed jointly with other programs and private groups.

PROMOTING USE OF INFORMATION

There are two essential prerequisites to ensuring the productive use of information. First, the prospective user must be prepared and educated to use information resources effectively. Second, organizations must be guided to acquire and organize information and information services that are relevant to the needs of their constituents.

OSIS hopes to exert positive influences on both prerequisites. In this context, OSIS has identified four program goals to structure work for promoting effective use of information. To focus on preparing individuals to use information as part of their career development. These are:

(14) *To Facilitate College and Graduate-level Awareness of Scientific and Technical Information Services.* As a first step, OSIS is engaged in the development of training materials and curricula suitable for use within existing science, mathematics, and engineering curricula. Research in this area will be developed in cooperation with the Education Directorate of the Foundation. Results will be assessed by an organization not associated with the development.

(15) *To Enhance On-the-Job Education and Training of Scientists and Engineers.* Beginning in FY 1976, OSIS expects to be able to begin cooperative development of on-the-job training programs with industrial and professional organizations. Conventional printed and audio-visual approaches will be tried, including computer-assisted instruction.

The final two goals, which focus on stimulating changes in working environments that will foster productive use of information, are:

(16) *To Provide Guidelines for Management of Scientific and Technical Information Services within Organizations.* Activities include analyses and experiments designed to help managers increase the range and diversity of information sources required by their R&D personnel. Access by infrequent users in small organizations that cannot afford large scale, computer-based services will receive special attention. Other research will focus on information access problems in large organizations.

(17) *To Provide Guidelines for Establishing Work Conditions that Enhance the Useful Application of Information.* In this case, emphasis is on increasing information use at the bench level for scientists and engineers. Plans call for analyzing existing arrangements and for introducing and assessing experimental variations in ways that will increase use of information. The results of these analytical studies will be used to develop experiments for testing alternative ways of overcoming obstacles to use of information. For both goals 16 and 17, initial work is focused on users in industrial settings. As results permit, work will be expanded to governmental, higher education, and other settings.

The 17 goals outlined by the head of OSIS represent a large and complex program. This endeavor, to be successful, will require changes in attitudes and practices of many individuals and organizations. Also the development of realistic and reliable data on cost-benefits and cost-effectiveness of information activities pre-

sents difficult problems. Attempts to generate such data in the past have not proven very successful. Such data are needed and I hope the new approaches will be successful.

OSIS is realistically not attempting to support immediately all activities under each of the 17 goals. Moreover, OSIS recognizes that the above statement of objectives needs refinement and is in the process of soliciting suggestions from individuals and organizations both within and outside the government. A series of conferences by a professional organization has been started. OSIS has contracted for a review and analysis of the OSIS program from its inception, with the intent to identify past policies and strategies which can be useful in refining its present goals and which will indicate strategies and methods for obtaining them.

In addition, OSIS continues modest support of research, improvements in ongoing information activities, studies that will aid in clarifying problems facing the scientific and technical information community, an active program of bilateral projects with other countries, and continued participation in programs of selected international organizations.

Conclusion

OSIS, as part of a federal R&D agency dedicated to furthering of research and education in the sciences, represents a unique federal government experiment. NSF, from 1952 to 1958, initiated a modest program of support of scientific information activities which emphasized support of individual investigators working on specific problems of interest to both the NSF and the investigator. A few grants were made to attack problems that seemed critical at that time, for example, initiating a translation program of Soviet scientific publications into English, providing funds to upgrade information services in biology and physics, assuming leadership to develop an exhibit of U.S. science at a world's fair, and cooperating with other federal agencies in studies of direct interest to these agencies.

Between 1958 and 1964, OSIS had the responsibility for leadership in affecting improvement in U.S. scientific and technical information activities. The charge to OSIS was to accomplish this task through improved coordination and cooperation and by upgrading present services. During this period OSIS supported a large and varied research and development program. However, the problems selected for research and development were for the most part identified by individuals and organizations outside NSF. OSIS funded about one-half the proposals submitted to it. During the latter part of this period, OSIS began to solicit proposals in areas that it decided should have priority. Also, OSIS made grants to improve on-going information activities of government agencies, scientific and professional societies, and universities. The office also underwrote the costs of initiating many new services by the organizations mentioned previously.

Although OSIS expended a great deal of effort and considerable funds attempting to stimulate effective cooperation and coordination among both governmental and

nongovernmental scientific and technical information activities, its efforts did not prove very successful. It did succeed in encouraging both federal agencies and scientific and technical societies to identify and begin to explore areas where cooperation and coordination seemed to be useful to the potential participants.

Late in 1963 the Office of Science and Technology began an effort to stimulate cooperation and coordination among members of the federal scientific and technical information community. It also held exploratory discussions with selected sectors of the scientific and technical information community. In 1964 this de facto situation was recognized by an agreement between the Office of Science and Technology and the National Science Foundation.

During the 1957–1964 period, OSIS was under considerable pressure from the Executive Office of the President, members of Congress, and some private groups to assume operational responsibility for some scientific and technical information programs. It was suggested at various times that OSIS establish and operate a national scientific and technical information center, and assume operational responsibility for the Office of Technical Services, the Science Information Exchange, and the National Oceanographic Data Center. Other suggestions were: OSIS establish and operate an office to collect and distribute royalties to be paid for copying and use of scientific and technical publications; the OSIS establish and maintain a research and development center oriented toward more effective use of computers and other new technologies.

OSIS, with strong support from the Science Information Council, the National Science Board, and the Director of the National Science Foundation, declined these responsibilities. It was assumed that operational responsibilities would take priority on use of staff time and funds. Therefore, OSIS would not have the flexibility necessary to conduct a grant and contract support program.

Between 1965 and 1971, OSIS concentrated on the support of a few large development projects of scientific societies, apportioned much of its research funds to university research centers, and underwrote experimental operations in universities exploiting bibliographic data bases in magnetic tape form. During this period it reduced support for U.S. translation activities and scientific publications. This course of action was followed in the belief that upgrading the information services of scientific societies would expedite the improvement of the U.S. scientific and technical information complex.

Since 1971 OSIS has phased out its support of large development projects of scientific societies, university research centers, and university centers furnishing service on multiple data banks of bibliographic information. It is striving to fulfill the role of national leadership which was returned to it in 1971.

Although OSIS has not fulfilled the expectations of either its staff or the federal policy and program officials, the federal government, in 1975, still maintains the position that OSIS is an important element in furthering the improvement of the U.S. scientific and technical information services. Recent testimony presented to congressional committees by individuals and organizations outside the federal government support this federal government position.

NOTES

The items described below are selected from a long list of journal articles, scientific and technical reports, and papers presented at meetings. The limited selection is based on: (1) usefulness of the item in giving additional information on NSF's science information activities, (2) were necessary to show the legal basis for the NSF programs, or (3) were a product illustrative of an OSIS funding decision. The order in which they are arranged has no particular significance.

1. National Science Foundation Act of 1950. Public Law 507, 81st Congress.
2. National Defense Education Act of 1958, Public Law 85–864, Title IX.
3. *Improving the Availability of Scientific and Technical Information in the United States*, Report of the President's Science Advisory Committee, December 7, 1958. Issued as a White House Press Release, December 7, 1958, mimeograph, 11 pp.
4. *Documentation, Indexing, and Retrieval of Scientific Information*, The Report of the Senate Subcommittee on Government Reorganizations and Internal Organizations, chaired by Senator Hubert H. Humphrey. Issued as a Report of the Committee on Government Operations, 86th Congress, 2nd Session, May 24, 1960.
5. *A National Plan for Science Abstracting and Indexing Services*, Robert Heller and Associates, Inc. Published by the National Federation of Science Abstracting and Indexing Services, Washington, D.C., March 1963; available from NTIS, Doc. No. PB 169 559.
6. *Current Research and Development in Scientific Documentation*, Volumes 1–15. Issued by the National Science Foundation from 1957 to 1969. Volume 12 is an index to previous volumes.
7. Harold Wooster, "Current Research and Development in Scientific Documentation," in *Encyclopedia of Library and Information Science*, Vol. 6 (A. Kent and H. Lancour, eds.), Dekker, New York, 1971, pp. 336–365.
8. *Strategic Planning and Decision Making in a Federally Funded Science Information Program*, Douglas E. Berninger, a dissertation in fulfillment of a Ph.D. requirement, 1975 at American University, Washington, D.C. Available from University Microfilms Inc., Pub. No. 75–19656.
9. *A Systems Study of Abstracting and Indexing in the United States*, Systems Development Corporation, Santa Monica, Calif. A Technical Memorandum produced under a National Science Foundation Contract, Number NSF C–464.
10. *Scientific and Technical Communication, A Pressing National Problem and Recommendations for Its Solution*, National Academy of Sciences, Washington, D.C., 1969; NAS Pub. 1707, 336 pp. A report of the Committee on Scientific and Technical Communication. There is a 30-page synopsis of this report also printed.
11. *Toward National Coordination of Scientific and Technical Information Through Research and Development*, Lee G. Burchinal, National Science Foundation, Washington, D.C., October 15, 1974, multilith, 13 pp. A paper presented at the 37th Annual Meeting of the American Society for Information Science, Atlanta, Georgia.
12. *Annual Reports* of the Office of Science Information Service, National Science Foundation, Washington, D.C. These reports were issued annually from 1959 to 1970 in multilith form. These reports give considerable detail on OSIS activities. They also include a list of the staff, and most reports have fiscal data on OSIS support programs. There is a summary report in multilith form covering the science information activities of NSF from 1952 to 1959.
13. *Annual Reports* of the Committee on Scientific Information (COSI) and the Committee on Scientific and Technical Information (COSATI). These reports were issued annually from 1963 to 1971. Each report has a brief summary of federal agencies' scientific and technical information activities.
14. *Science Information Notes*, National Science Foundation. This bimonthly publication gives brief notes on activities in the library and information science field. Many of the

OSIS international activities are described briefly in this news journal. Also, each issue has a list of the new OSIS grants and contracts. The material was prepared by the staff of OSIS. Volume 1 was titled *Science Information News*.

15. *Nonconventional Scientific and Technical Information Systems in Current Use*, National Science Foundation, Washington, D.C. There are four numbered issues of this publication. The first volume appeared in 1958, the second in 1959, the third in 1962, and the fourth in 1966. The indexes in each volume are helpful in identifying performers, equipment, and organizations.

BURTON W. ADKINSON

NATIONAL SCIENCE LIBRARY OF CANADA*

See also *Canada, Libraries in*, and *Canada National Library*

The National Science Library of Canada, unlike most national libraries, came into being not as the result of one specific Act of Parliament, but through a long series of government directives and Cabinet decisions.

The library had its beginnings in 1924 when a small resource collection was established to serve the scientific staff of the newly organized laboratories of the National Research Council of Canada (NRC). Dr. H. M. Tory, first president of the NRC, firmly established the future course of the library when, in a letter to Dr. F. P. Keppel, president of the Carnegie Corporation, he announced his intention of "building up at our central office in Ottawa, a library that would serve scientific workers everywhere in Canada."

When the National Library Act was passed in 1953, through an agreement signed by Dr. E. W. R. Steacie, then president of the NRC, and Dr. W. K. Lamb, first national librarian, it was decided that rather than duplicate the extensive resources of the NRC Library, the National Library would concentrate its limited funds on the development of collections in the humanities and social sciences. The NRC Library would in turn continue to strengthen its resources in the fields of science and technology in order to keep pace with the NRC's growing needs and to meet the needs of individuals and libraries outside of Ottawa who were turning increasingly to the library for publications and information not available elsewhere in Canada. The NRC Library had become in fact, if not in name, the National Science Library.

In 1966 this de facto position was formally recognized when, through the revision of its Act (*1*), the NRC was given responsibility for the operation and maintenance of a National Science Library (NSL) to serve Canada. This formal action was further strengthened in 1970 when, through a Cabinet directive, and as the result of a series of studies dealing with the establishment of scientific information policies, NRC was given the mandate to develop, under the general direction of the national librarian, a national scientific and technical information (STI) system, or more correctly, a national network of scientific and

* Amalgamated to the Canada Institute for Scientific and Technical Information.

technical information services. It was assumed by many, both in Canada and abroad, that this concept of a national decentralized scientific and technical information system as outlined in the "Katz Report" (2), which utilized information resources and services wherever they existed, was something quite new. This was not the case, for Canada had had for many years the foundations of a national STI system, with the NSL serving as its focal point.

Be that as it may, the NSL, given new impetus by the Cabinet directive of 1970, tackled its national responsibilities with renewed vigor, taking whatever steps were necessary and possible for ensuring that scientists, engineers, technologists, research workers, and managers have ready access to scientific and technical publications and information required in their day-to-day work. The basic aim was to channel the right information to the right person at the right time.

It soon became evident that because of the rising flood of scientific and technical information, this aim could not be achieved through normal library procedures. The library accordingly focused its attention on the development and application of electronic techniques to expedite and facilitate the retrieval and dissemination of information.

Over the years, the NSL's resources have been continuously developed in close cooperation with all major libraries in Canada. These resources and services are designed to complement and supplement local resources and also to provide essential backup to the information services provided by the NSL's staff of information specialists. The linking of these national STI resources into a national library network was achieved by 1957, through publication of the *Union List of Scientific Serials in Canadian Libraries* (3). Ten years later, in 1967, the preparation of this *Union List* was fully mechanized. Now, in 1974, through the *Union List*, issued both in printed and microfiche form, and with the NSL serving as its keystone, the resources of 245 university, federal, provincial, and industrial libraries are linked and made nationally available. This means that Canadian scientific and technical communities have ready access to the contents of some 46,000 different serial publications and journals which account for at least 80% of the world's scientific and technical literature.

A second network within this developing national system was inaugurated in 1969 with the establishment of the Canadian Selective Dissemination of Information Program (CAN/SDI). This computer-based service continuously alerts subscribers to the existence of recent papers covering their specific fields of interest. At present, the interest profiles of 1,900 subscribers are searched against 14 data bases to serve approximately 6,000 end-users seeking information in the various fields of science, engineering, and medicine. This system is unique for several reasons: (1) It is national in scope. (2) The technique enables users to access any of 14 source tapes with one interest profile, to switch from one tape to another, and to tap the information content of several tapes without major changes in the search terms or search logic. (3) The service is a decentralized one wherein some 500 search editors, trained by the NSL and located in all parts of Canada, serve as an interface between the CAN/SDI services and the ultimate users. (4) The NSL ensures that all papers cited on the tapes are available either at the NSL or

other readily accessible centers in Canada and provides photocopies of cited papers which cannot be obtained through local sources. During 1974, the CAN/SDI program was augmented by the Canadian On-Line Enquiry System (CAN/OLE). This third network, a system for on-line retrospective searching of large bibliographical files, at present operates through 15 terminals located across Canada. Users remote from Ottawa are thus able to search the world's scientific and technical literature and in a matter of seconds determine what has been published during the last 4–5 years in all the major fields of science and technology. The program differs from similar systems operating in the United States and other parts of the world, such as in searching techniques, but more particularly in that it is national in scope and can be accessed in either of Canada's two national languages.

In 1966, upon advice to the federal government by a committee representing the Association of Canadian Medical Colleges, the Medical Research Council, and the Committee of Medical Science Libraries, the NSL was assigned responsibility for serving as the Health Sciences Resource Centre for Canada. The committee recommended, not the establishment of a national medical library, but rather that the NSL should take action to coordinate, strengthen, and make readily available existing medical literature and information resources throughout the country. Over the years, a variety of reference tools have been published to assist in this coordination, as for example, *Canadian Locations of Journals Indexed in Index Medicus* (4) and *Conference Proceedings in the Health Sciences* (5), a listing of and index to such proceedings held by the NSL from 1925 to date. The center, working in collaboration with the U.S. National Library of Medicine, provides the Canadian medical communities, through 10 MEDLINE centers, with direct access to the contents of 2,400 of the world's leading medical journals.

In addition to serving as the focal point of the above mentioned networks, and as a coordinator for the national STI system, the NSL provides several accessory and coordinating services which are also national in scope. For example, it operates a computerized inventory of federally funded research carried out at all Canadian universities. The information stored in this data base, although designed for on-line accessing, is also published annually in a two-volume work entitled *Directory of Federally Supported Research in Universities* (6). It serves as the national center for information on pollution and environmental control. A pollution data base has been created which covers world literature back to September 1968 and at present contains 60,000 citations. Supplementing this activity, the NSL has been named the Canadian focal point for the United Nations International Referral Service for Sources of Environmental Information. The NSL's Translation Centre provides English or French versions of foreign-language scientific papers and maintains the Canadian version of the European Translations Centre Index of Translations, with some 300,000 entries.

Complementing these sophisticated services, the NSL provides a variety of traditional national services. A Reference and Research staff trained in scientific and technical subjects, having competency in foreign languages and skilled in using the keys to the world's scientific and technical literature, answers requests for

factual scientific and technical information. This staff, using both computerized and manual methods, also carries out literature searches and compiles bibliographies. The NSL serves as a national lending library and provides loans and photocopies of material not available in other parts of Canada. These requests are processed currently at the rate of approximately 600 each working day. The library publishes a wide variety of reference tools designed to facilitate the use of Canadian scientific and technical literature, for example, a *Directory of Canadian Scientific and Technical Periodicals* (7), a directory of *Scientific and Technical Societies of Canada* (8), a periodic bibliography, *Scientific Policy, Research and Development in Canada* (9), and last but not least, the National Science Library serves as the national referral center or last port of call when seekers of scientific and technical information do not know who to contact and when local resources are inadequate.

With the rapid development of new services and resources, the NSL by 1957 had outgrown its quarters in the NRC's main building on Sussex Drive in Ottawa. Steps to plan for a new building were initiated in 1959—a process which took 12 years to complete, and it was not until August 1971 that funds were made available and construction begun. Construction was completed by January 1974 and the NSL occupied its new quarters on February 11, 1974 (see Figure 1).

This $14.8-million structure has been designed to utilize the latest mechanized techniques to facilitate the storage, retrieval, and dissemination of information, in essence making it unnecessary for seekers of information to leave their home

FIGURE 1. *Canada Institute for Scientific and Technical Information, Ottawa, Canada.*

base. The 360,000 square feet of gross space is spread through eight floors. The ground floor contains many of the technical support services for the library. The first floor is the public area, located around a central Information Desk. The administrative offices and the NRC's Technical Information Services are located on the second floor. Above this floor is a smaller, five-story tower. The third floor is occupied by offices and an environment-controlled, fire-protected computer area. The remaining four stories contain the stacks, to house 2,000,000 volumes.

Paralleling the construction of the new building, steps were being taken by the NRC to develop an organization which would more clearly indicate its responsibility for the development of a national network of STI services. A division for Scientific and Technological Information Service was established, and on October 16, 1974 the new building was officially opened and dedicated by C. M. Drury, the Minister designate for the National Research Council, and named the Canada Institute for Scientific and Technical Information.

In this institute (CISTI), the NRC has brought together its principal information transfer systems, the National Science Library and the Technical Information Service. The complex of services and activities performed by the National Science Library as outlined above will be continued. Also to be continued as an integral part of CISTI are the alerting, searching, and delivery systems for pre-evaluated published information provided through the Technical Information Service and directed primarily to small and medium-size industry. Through the union of these two services, the NRC is even better equipped to be a leader in developing new methods for the dissemination of information and to fulfill its mission as planner, promoter, and a major participant in the evolving Canadian network of scientific and technical information services.

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JACK E. BROWN

NATIONAL UNION CATALOG

The National Union Catalog, produced by the Library of Congress, is the most complete national bibliography and national union catalog in existence. It contains in its present printed version a photoreduced copy of every Library of Congress card, plus copies of cards from over 1,100 North American libraries for materials not in the Library of Congress collection. The National Union Catalog (NUC) is a central record for location of materials, in addition to being the basic American bibliographic source for verification, description, and identification. It has existed since 1901 as a card catalog at the Library of Congress and as a book catalog since 1956. Ernest Richardson cited part of its potential value in 1929:

> The Union Catalog of the Library of Congress is designed as the method of locating books and as an aid to cooperative purchase and copying. It aims, in the end, to locate at least one copy of every book, printed or written, which may be wanted for use, in some library where it may be used,—in North America if possible, if not, then elsewhere (*1*).

However, NUC is far more than simply a location or finding list. In 1952 Rudolf Hirsch listed five major uses or purposes for a printed NUC:

> 1. ACQUISITIONS: (a) avoiding duplicate purchase of expensive items on a national basis; (b) filling in of gaps on a national basis; (c) verification of prospective purchases; and (d) definition of degree of scarcity in evaluating offers of second-hand books. In other words, a published National Union Catalog would be most important as a guide to book selection and it would simplify the task of verification.
>
> 2. CATALOGING: (a) standardization of entries in accordance with forms found in the printed National Union Catalog; (b) use of the descriptive portion of the entry, as far as is acceptable; and (c) bibliographical reference to the published National Union Catalog, whenever there is a simpler description sufficient for local or institutional use.
>
> 3. INTERLIBRARY LOAN—locating copies of older imprints on a national basis, with minimum effort.
>
> 4. REFERENCE AND RESEARCH: (a) Library Use: (1) verification of titles; (2) direction service (telling readers where items wanted can be found); and (3) serving as a substitute for a number of individual author bibliographies and library catalogs which are now consulted; (b) Readers' Use: bibliographical value to all concerned with information on titles by known authors (author bibliography, government documents bibliography, etc.).
>
> 5. PUBLIC CATALOG—it may be possible to achieve great savings in space and filing costs by dividing present public catalogs and withdrawing from the author file entire groups to be found in the reference copies of the printed National Union Catalog (*2*).

It should be pointed out that of these five uses, only the last one has not been fully implemented since the publication of NUC.

The first step toward the development of a union catalog for this country was taken by Herbert Putnam, then librarian of congress, in 1901 when he initiated the distribution and deposit of printed LC catalog cards to American libraries. He stated:

> It is fully recognized by the Library of Congress that next in importance to an adequate exhibit of its own resources, comes the ability to supply information as to the resources of other libraries. As steps in this direction may be mentioned:
>
> First. The acquisition of printed catalogues of libraries, both American and foreign.
>
> Second. An alphabetic author catalogue on cards of books in department and bureau libraries in Washington.
>
> Third. A similar catalogue of books in some of the more important libraries outside of Washington.
>
> The Library of Congress expects to place in each great center of research in the United States a copy of every card which it prints for its own catalogues; these will form there a statement of what the National Library contains. It hopes to receive a copy of every card printed by the New York Public Library, the Boston Public Library, the Harvard University Library, the John Crerar Library, and several others. These it will arrange and preserve in a card catalogue of great collections outside of Washington (3).

By 1909 exchange arrangements for catalog cards had been made with several American libraries, including the Boston Public Library, Harvard, John Crerar, and the New York Public Library.

Although by 1926 these agreements had generated a Union Catalog at the Library of Congress of about 2 million cards, the catalog was still far from being truly comprehensive. During that year the American Library Association sought and received a grant from John D. Rockefeller, Jr., to expand the Union Catalog at the Library of Congress. The Rockefeller gift consisted of $250,000 to be allocated at the rate of $50,000 a year for 5 years. During this period, 6,344,356 cards were added to the Union Catalog. In 1931 Richardson wrote:

> It is fitting at this point to recognize in no uncertain terms the fact that it is the generous grant of Mr. Rockefeller which has made actual the one indispensable basic factor in the great problem of meeting the reasonable needs of research students as to books (4).

In 1932 a separate Union Catalog Division was established at the Library of Congress with Mr. Ernest Kletsch as its director.

The first major benefit for interlibrary loan occurred in March of 1936 when the Union Catalog Division began serving as a clearinghouse for interlibrary loan requests. Initially, this service was available only to members of the Association of Research Libraries, and was then extended to others (5).

In 1941 an Association of Research Libraries committee with William Warner Bishop as the chairman sponsored a project to produce a book catalog of Library of Congress catalog cards. Since 1901 the Library of Congress had been depositing cards in major research libraries, and by 1941 the number of such depository

libraries had exceeded 100. A catalog of photographically reduced LC cards was desired to reduce the costs to these depository libraries, as well as making such a depository catalog more widely available. In 1942 the first volumes of this national library catalog appeared. The cutoff date for cards to be included was July 31, 1942. The arrangement was by the main entry, or author card, only. This catalog was to be completed in 1946 in 167 volumes including approximately 1,900,000 cards. This represented the first book catalog issued by the Library of Congress in this century. Its title was *A Catalog of Books Represented by Library of Congress Printed Cards Issued to July 31, 1942*. It was printed by Edwards Brothers of Ann Arbor, Michigan. Its acronym became LCPC. A 42-volume supplement to LCPC was issued in 1948 with the title . . . *Supplement: Cards Issued August 1, 1942–December 31, 1947*.

In 1946 Halsey William Wilson, the library science publisher who had founded the H. W. Wilson Company (see *Wilson, Halsey William*), recommended that the Library of Congress regularly issue cumulative supplements to LCPC in the fashion of Wilson's own publication CBI *(Cumulative Book Index)* (6). (See *Cumulative Book Index.*) In January of 1947 the Library of Congress began to publish the *Cumulative Catalog of the Library of Congress Printed Cards*. Also that year, the Union Catalog of the Library of Congress was designated the National Union Catalog.

In 1950, in order to provide subject access as well as main entry access to its printed catalog, the Library of Congress issued the *Library of Congress Subject Catalog*. The *Cumulative Catalog of the Library of Congress Printed Cards* was renamed the *Library of Congress Author Catalog*. The following year, John Cronin became director of the Processing Department at the Library of Congress. One of his major contributions was the expansion of LCPC into NUC. Gordon Williams, director of the Center for Research Libraries, writes of Cronin, "No one has contributed more to it, or done more to shape the form of this greatest of all union catalogs" (7).

LCPC was expanded in 1953 to include separate catalogs for maps, motion pictures and filmstrips, and music and phonorecords. The Subject and Author Catalogs were renamed *Library of Congress Catalog—Books: Authors* and *Library of Congress Catalog—Books: Subjects*. The second supplement to LCPC was also issued in 1953. It was called *Author Catalog: a Cumulative List of Works Represented by Library of Congress Printed Cards 1948–1952* and consists of 24 volumes. The following year the American Library Association's Board on Resources of American Libraries appointed a new Subcommittee on the National Union Catalog, which proposed that the *Library of Congress Catalog—Books: Authors* be expanded to become the *National Union Catalog*. The first issue of NUC, containing not only LC cards but also cards from cooperating libraries for books not held at the Library of Congress, was published in January 1956.

The first cumulation of NUC and the third supplement of LCPC appeared in 1958. It was entitled *The National Union Catalog; A Cumulative Author List*

Representing Library of Congress Printed Cards (1953–1957) and Titles Reported by Other American Libraries (1956–1957) Imprints and consists of 28 volumes. This cumulation only represented the NUC for the years 1956 and 1957. In order to meet the desire and need for a retrospective NUC, the Library of Congress in 1961 issued a 4-year catalog for 1952–1955 entitled *The National Union Catalog, 1952–1955 Imprints; An Author List Representing Library of Congress Printed Cards and Titles Reported by Other American Libraries.* This is a 30-volume work. This catalog duplicated the LC printed card entries for 3 years included in this cumulation, i.e., 1953, 1954, and 1955, as they had already been issued in the third supplement to LCPC. It did not, of course, duplicate the entries from other American libraries.

In 1963 the ALA Subcommittee on the National Union Catalog decided to publish a retrospective NUC of pre-1956 imprints. The firm of Mansell Information/Publishing Limited of London was selected as the publisher. Mansell's special photocopy process allows entries to be expanded with additional locational symbols and unique serial numbers. In 1968 the first volumes of *The National Union Catalog, Pre-1956 Imprints* appeared. This massive undertaking is projected at about 610 volumes, containing about 12,750,000 entries. American bibliographer Richard H. Shoemaker called this, "Surely the greatest bibliography of roman alphabet entries ever produced; long awaited, and finally beginning to appear" (*8*). He goes on to praise Mansell:

> This reviewer feels that not enough credit for the appearance of this great work is given to the publisher. For many years some librarians urged the publication of the retrospective National Union Catalog, even if unedited, on the theory that if it was so very useful in Washington where it existed in only a single copy on cards, it would be multiplied in usefulness by the number of copies in book form that would be distributed. But perfectionist hesitancy and lack of financial support by the Library of Congress and the ALA, as well as some technological conservatism, prevented this until Mansell came along with their advanced technology gained by experience in producing the *British Museum Catalogue.* They even were willing to finance the editorial costs, certainly a function which one might expect from the national library and/or the national professional association (*8*).

Presently NUC, pre-1956, is over half completed. When it is completed, *The National Union Catalog, Pre-1956 Imprints* will supercede *A Catalog of Books Represented by Library of Congress Printed Cards Issued to July 31, 1942* (LCPC); *. . . Supplement: Cards Issued August 1, 1942–December 31, 1947; Author Catalog: a Cumulative List of Works Represented by Library of Congress Printed Cards 1948–1952;* and *The National Union Catalog, 1952–1955 Imprints; An Author List Representing Library of Congress Printed Cards and Titles Reported by Other American Libraries.*

The NUC continues to be published by the Library of Congress at a frequency of nine monthly issues (January, February, April, May, July, August, October, November, December), three quarterly cumulations (January–March, April–June,

July–September), and in annual and quinquennial cumulations. Other Library of Congress catalogs include:

Books: Subjects
Films and Other Materials for Projection
Monographic Series
Music, Books on Music, and Sound Recordings
Name Headings with References
National Register of Microform Masters
National Union Catalog of Manuscript Collections

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JOHN PHILLIP IMMROTH

NATURAL CLASSIFICATION

Definition

A classification is called natural for the same reason that a language is called natural. It arises from the needs and methods of communication utilized in everyday life from time immemorial among all the peoples of the world. A natural language cannot be traced to its ultimate origin, although it would be possible to define human beings as those primates which use language. Although library classifications can be traced quite clearly, if not entirely accurately, at least back to classical sources (*1*), only those library classifications developed first by Melvil Dewey and then by those who followed in his path need concern us here.

Natural classification is closely linked with natural language and may be de-

fined as a means by which the subject content of information sources is made accessible within established semantic contexts. Natural classification differs, first, from taxonomies and then from abstract classification. A taxonomy is a method of establishing classes of real things by establishing ranks of similarities and differences. An abstract classification utilizes nonlanguage characteristics of information sources for purposes of providing access to them. If accidental, then the classification is based upon features that may be added (such as accession number) or observed (such as color of binding of books, size of reports, etc.). If artificial, then the classification is based upon such characteristics as author's name, point of origin (issuing body), or other features that do not provide a reliable guide to the subject content.

Natural classification, however, is inextricably dependent upon natural language for its existence and may be a feature of language so far only imperfectly understood. Semantic context, the means by which language achieves its purpose in providing a tool of communication, accounts both for the paradigmatic classes of language and for the mechanisms by which subject content is grouped into semantic contexts in classification. Both language and classification, to be natural, arise without intervention as a tool of communication, the one for the expression of immediate needs, moods, preferences, opinions, ideas, and so on, and the other for providing a grouping of all the recorded communication. Grammatical categories which account for the existence of paradigmatic classes in natural languages explain as well many of the groupings of natural classification and the essential communicative process which is served by classification.

It is for this reason that the use of the word "logical" in the definition of a natural classification is perilous at best, and usually inaccurate. Just as natural language fails to convey logical concepts accurately, natural classification fails to exemplify them. When logical procedures are utilized in natural classification, its communicative value is greatly reduced. A grammar of classes, expressed in symbolic form, is both the primary method of construction and test of taxonomies, but even in the classification of taxonomies, natural language prevents the development of symbolic forms that can be utilized to develop a natural classification. This is due to the variation of subject content arising from the form of presentation—verse, prose, pictorial, fiction, nonfiction, native or foreign language, alphabetic or nonalphabetic, its position in an assumed chronology of such presentations; and its purpose—dictionary, encyclopedia, teacher's manual. Granted that the subject content is not the primary feature of the classification, it is at least the deep structure, as observed in natural language. It is not surprising, then, that all attempts to construct a symbolic logic that will account for the features of successful natural classifications have been failures.

Natural classification has served as a primary tool of communication in libraries and grew both in content and method as open-stack libraries became the rule rather than the exception. It should not be assumed that natural classification was adopted by the users of the libraries as their means of gaining access to library materials, but that it served to provide spatial regularity which library users rapidly

come to rely upon. Reshelving a library, without changing the classification, will often bring complaints from users that "their books" have been discarded, when they have only been moved. It is quite sanguine to assume that the user will utilize the classification as anything other than the address at which he can locate material that interests him. Sometimes users will complain that a book has been misclassified, as sometimes it has been, and few users will not observe that an error has mixed the wrong sort of books with those that interest them. Nevertheless, the mechanics of classification remain mostly a mystery, and an uninteresting perplexity, to library users who customarily check a location to see if anything new has been added.

The study of classification has come to be named the theory of classification. Although at first glance this seems as much a misnomer as any other study labeled a theory when it is, in fact, an ongoing investigation, there is good reason to state that, in the scientific sense, considerable theory exists which explicates and provides a frame of reference for further studies, just as in linguistics and other areas of investigation. Obviously, the scientific sense is not that of physics or chemistry nor even of mathematics, but it is nevertheless a good way of knowing something and testing its reliability. Furthermore, certain rigid laws of efficiency have been stated that seem to explain many of the problems of classification. The theory of classification seeks to explain the purpose as well as the mechanics of natural classification, the constraints and possibilities inherent in arrangements of semantic context utilizing an organization independent of natural language.

In this sense, alphabetic order and random order can be considered features of classification worthy of study. But neither fulfills the essential requirement of a natural classification that semantic contexts be arranged without recourse to the method of any natural language. In providing groupings of semantic contexts, random order and alphabetic order may not be considered as methods of organization. The former is a contradiction and the latter an impossibility. No natural language provides for the consistent arrangement of semantic contexts in alphabetic or any other order. All attempts at twisting natural language into some kind of consistency have been resounding failures. While natural classification must employ natural language to be understandable and useful, its greatest utility is found in its freedom from natural language such that it can serve as an artificial language based upon consistency of arrangement of semantic contexts by creating its own set of indicators and controlling them with a unique grammar.

Just what information sources are classified is much less important than that a natural classification provide access to semantic contexts in such a way that the most significant feature of all communication is not obscured, all knowledge is related, and every information source occupies a specific location. Though the pathways to the location may be varied, the location remains. Direct classification of material arranges the material itself; indirect classification arranges the access points to the material. The most obvious advantage of natural classification is that it may be direct or indirect, and probably should be both to provide maximum access to information at minimum cost of energy.

The test of natural classification is, therefore, efficiency of access. It is the purpose of the theory of classification to explain how the maximum of access is achieved and what procedures represent an unprofitable expense of energy either for the classifier or the user, or both. The purpose of classification is seen in its arrangement of semantic contexts independent of natural language. Indexes, which are useful arrangements of topics and names, are valid only within a single work or, at best, within the works of a single author. Linguists now realize that each speaker of a language, in effect, uses a language uniquely and that the semantic boundaries of words and terms must broaden as many different speakers of a language employ terms. A classification is capable of setting its own semantic boundaries and establishing contexts that can accommodate the differences of language of many writers in many languages. Classification is, therefore, a means of achieving efficiency of retrieval of material, assuring complete recall and maximizing the relevance of information sources, depending on how well the classification is employed, supposing that it can be employed efficiently.

The early days of information retrieval studies assumed that classification was unnecessary, that speakers of a language could use the terms of an index to provide complete recall, without investigating how great an assumption this is. The indexer must accurately apply all those terms that the user is likely to utilize to gain access to the material. At times the indexing system simply fails to furnish the needed number of terms so that the indexer can at best provide only a superficial coverage of the information sources so far as the original author is concerned (2). This may assure efficient recall of material but only at the cost of relevance. At other times the index contains so many terms that the indexer is bound to forget many of them if they are left in alphabetic array. Attempts to provide interrelationships between terms, the *see also* structure, are notoriously unsuccessful. The *see also* structure, particularly in computerized systems, introduces rigidities of form so complete that the index is incapable of change. While terms may be added, none may be dropped, and minute changes of form make the system unusable (3). Even a haphazard classification system is better than the *see also* structure in showing the relationships between terms, whether direct or indirect indexing is employed. The several studies of subject headings seem to bear this out completely, especially the study of the last classified edition of the Sears subject heading list (4).

We may define a natural classification as a systematic arrangement of semantic contexts meant to provide maximum access to information sources at minimum expense of energy, independent of the constraints of natural language. To be complete, a natural classification must display the systematic arrangement which implies a notational representation of semantic contexts as well as the labels for these contexts in one or more natural languages. It is necessary as well to provide an index of these labels if they are capable of assuming an orderly array through some inherent feature. Alphabetic order is the most obvious, although the stroke-count radical system of Chinese characters, while very much more complicated, still represents an array utilizing inherent features of the labels employed. A

natural classification is complete only if the schedule terms are indexed and the notation that provides for the systematic arrangement is included both in the schedules and the index. Schedule terms, the labels of semantic contexts in natural language, must not be altered in the index. Incomplete or erroneous indexing of the schedule terms is an obvious cause of inefficiency (5). In sum, a natural classification employs natural language to provide a display of semantic contexts in both a systematic arrangement and an arrangement utilizing inherent features of the natural language employed as labels of the contexts. A natural classification, then, needs schedules, notation, and index. Lacking any part, the classification is incomplete and inefficient. More than one natural language may be employed as labels, but all must be indexed if the classification is to achieve its purpose. One of the most amazing facts of library and information science is the length of time necessary to realize that subject heading lists and classification systems are intimately and necessarily related.

Semantic Contexts

Linguists long ago observed that several features of natural language were related to its use as a tool of communication. This general area, the study of the meaning and use of words to convey thought among people—semantics—has been remarkably incalcitrant to methods of systematic study. Nevertheless, homonyms— words that are the same shape but mean different things to different people—can be identified, and as the problems of morphology and syntax were resolved, a clearer idea of semantics as an area of objective study was gained (6).

A semantic context is the area of meaning in which a given term in a given language may be used. Not to belabor a simple word but highly complex idea, meaning is used to designate the communication value of a given term, that is, a word or words that can be employed by a native speaker with the intention of conveying his thoughts to another person or to any number of persons at any time. Natural classification does not attempt to arrange words or terms according to their meaning, but it can arrange semantic contexts to show the relationship between them. It is this independence of natural language that constitutes the primary value of, and need for, classification. Polyglot dictionaries and the thesaurus of a given language are arranged by semantic contexts, generally in a highly systematic fashion (7, 8).

Even alphabetically arranged dictionaries of a single language, or bilingual dictionaries, generally include a context for the terms in order to distinguish between the usage of certain terms. There are many jokes about the misuse of terms through inappropriate semantic context. (The diplomat, upon arriving in Washington with his wife, was asked by journalists if he had any children. "No," he explained, "My wife is unbearable. I mean inconceivable. I mean impregnable.") The correct term for this semantic context is "barren" or possibly "sterile." To find the appropriate term, the foreign diplomat may have consulted a

bilingual dictionary which gave him a choice among five terms and unluckily he tried only the wrong ones.

One of the first assumptions a non-native speaker makes is that the language he is learning has the same semantic boundaries as the language he knows and that the semantic contexts are equally represented in both languages. Only a brief comparison of the Universal Decimal Classification makes it obvious that terms found in one language may not exist in another and that a single term in one language may include semantic contexts represented by several different terms in another language, each of which has its own area of correct usage. While every semantic context within a language has its own terminology ranging from the narrowest of meanings to the broadest of relationships among terms, these contexts do not precisely match any other language, either because the term has never been needed, hence never established by convention as appropriate, or because the grammar of the language does not admit of the possibility of a semantic context that exists in another language. Grammar introduces constraints through the mismatch of grammatical categories. While in Japanese and Korean the verb necessarily indicates the social position of the person to whom or about whom you are speaking, this cannot be conveyed precisely in European languages. Similarly, the grammatical category indicated by definite and indefinite articles in Western European languages is lacking in Japanese and Korean.

All this is not especially significant in classification systems, except to rule out an expectation that an exact translation is possible or desirable. At best, classification systems must be adapted from one language into another. An even more important conclusion is that the language used by one writer is generally not the language of another, even though both use a tongue learned as native speakers. This is especially true when the writers are reporting the results of research into the vast unknown, where even the terminology is new. The vocabulary of any language is less than is needed to express new ideas. As a science grows, its terminology solidifies and becomes generally adopted, but semantic differences are wide enough so that two authors dealing with the same phenomena have to define their terms before they can argue successfully about anything other than the meaning of their words.

This is the reason that indexes are generally unsuccessful except for a single work. As the number of works to be indexed increases, the semantic boundaries widen and the semantic contexts blur. The early studies of information retrieval often neglected this point, so that some of the early theorists were either busy proving the futility, or worse, of classification, based on a few documents—or were reinventing library classification, usually hierarchical, because of the surprising results that a study of many documents from many sources occasioned. Almost all the conclusions were drawn from a study of English, a remarkably intractable language grammatically, although furnished with an abundant and highly flexible vocabulary.

So far the arrangements of semantic contexts fit into three patterns: sequential, hierarchical, and what we may call associative or attributive. A faceted classification

is actually an attributive system with fixed fields, distinguished from an associative classification with free fields. Library classification systems that are essentialy natural classifications are rarely, if ever, purely one of the three possibilities. An admixture is expected both of different arrangements and even of such abstract features as author sequences and size of books. Perhaps significantly, the four best known classification systems each fit into one of the four types established. The Dewey Decimal Classification is meant to be essentially hierarchical; the Library of Congress Classification is largely sequential; the Universal Decimal Classificatior is associative, that is, attributive but with free fields; and Ranganathan's colon classification is faceted, that is, attributive but with fixed fields. Each is, in fact a mixed classification utilizing one principle in a given subject area and another elsewhere, but the guiding purpose is most clearly seen in the different notations for each of these classifications.

These kinds of classification can easily be paralleled in the nominal structure of English with its easy utilization of modifiers. Nouns and adjectives can be employed as modifiers and even phrases, although verbs are usually employed only with morphological changes. Grammarians generally regard adverbs as adjectives when they modify nouns, so that Never-never Land makes never into an adjective. The repetition is employed for emphasis rather than as a device to create an adjective of an adverb. Sequences are seen in the repetition of the head of the construction in such series as big dogs, little dogs, pedigreed dogs, and mongrel dogs. A sequential classification is also seen when the semantic boundaries are assumed: puppies, whelps, lap dogs, hunting dogs, mongrels, curs, pariah dogs. When these terms are arranged into semantic contexts wholly contained within the semantic boundaries of another semantic context, a hierarchy is established. For instances, dogs of many sizes: big dogs, little dogs, from monstrous hunting dogs to miniature lap dogs; and dogs of every ancestry, pedigreed dogs, dogs of mixed breed, mongrels, curs, and pariah dogs. Because English has a fixed order for adjectives used in series with a single head of construction, a kind of faceted classification is seen in such phrases as "a small, brindled, short-hared dog." The order of adjectives is more flexible here than in such a phrase as 'an expensive, small, black, Korean, lacquer box." The meaning of the adjectives changes if the order is not preserved. Since other adjectives and adjectival phrases may be added, positioned before and after the head of the construction, an associative grammar can be demonstrated.

Semantic contexts, however, are not controlled by the grammar of a natural language in a natural classification, so that the grouping of terms is independent of all save their accepted meaning. What is rigidly controlled by these possibilties of arrangement is the notation, even though the semantic contexts may seem to show another kind of arrangement. The sequential notation of the Library of Congress Classification is used willy-nilly, whether or not the particular part of the classification arranges semantic contexts into hierarchies or provides for associative features in the use of tables. Geographical tables are, of necessity, hierarchical but they constitute a feature of an associative classification. The trick in using the

notation of the Library of Congress is to preserve its sequential arrangement regardless of the semantic contexts. Thus the tables in the H classification provide for different associative arrangements in different parts of the schedules, even though the semantic contexts are all geographical, all hierarchical, and the same for each of the columns that designate where the geographical subdivisions are to be used. The columns differ in the notation, providing more possibilities in one place and fewer in another. When completely elaborated, however, it is seen that each of the columns fits neatly into designated places in the H schedules. In other parts of the classification, even within the H schedule, the tables are not used. The geographical arrangement within a subject area is carefully designed to fit that subject area and no other.

Requirements that preserve the hierarchical notation in the Dewey Decimal Classification can be demonstrated by the use of zeroes, both before and after the decimal point, especially in the 18th edition, where the tables provide associative features in Volume I that can be used throughout the classification. However, the notation requires that the numbers supplied in the table occur in the places where the hierarchy of the notation will not be disturbed. Otherwise, severe ambiguity would result, with one number meaning two different things.

Ranganathan's great discovery of a faceted classification, a limited and fixed number of necessary associations, utilized a principle of Arabic numerals, actually invented in India, whereby the expression of a number is dependent upon the number of positions used for the digits. All faceted classifications having fixed fields must indicate an empty field. The Universal Decimal Classification with its signals of fields has no such requirement. There is reason though to align these signaled fields in a fixed sequence so that the search time can be reduced and the preparation of a classification number can follow rules which increase efficiency. The designators of geographic subarrangement, chronology, language, and so on are each distinct, so that a number will have any of these facets only if needed. Ranganathan makes no provision for empty facets, though later designers of such schemes have found it useful to do so, generally by showing a blank field with a single indicator, such as a hyphen, in the appropriate position.

The significance of the rigidity of arrangement for the notation is that it provides a larger semantic context for any given one, however minute, and relates this to all the other semantic contexts, thereby establishing both a principle of growth and easily utilized location symbols. A rather frequent error is concealed in the studies of hierarchical systems that assume a necessary hierarchy of terms in a given language. The hierarchy, if it exists, is to be found in the semantic context of the term, and this is not fixed by the term itself but by semantic boundaries that the notation creates. That is, words cannot be grouped in absolute hierarchies. Aside from such features as homonymy, a word assumes the semantic context of its location within a natural classification. Mongrels are not subdivisions of dogs, but first of all a word that may indicate this distinction along with many others. This perplexity derives from a misunderstanding of the significance of terms within a natural classification. They are not absolutes but the best available translation

of the artificial language and its terms as established by the notation. A taxonomy, which is meant to arrange observable actual things, usually establishes natural hierarchies, but a word is not the thing it indicates. A word remains a word and the thing it indicates remains a thing regardless of the word used as indicator. Hence we must treat semantic contexts as a feature of natural classification established by the guiding principles of the notation, so that the semantic boundaries of the contexts are clearly delineated by the notation. The more numerous the subdivisions of a semantic context, the more precise that context becomes (9).

Notation

The notation of a natural classification is an artificial language having its own rules of grammar and its own system of graphemes, the smallest units that are combined to create semantic contexts. Notations, to be efficient, must be at once economical of graphemes but hospitable to semantic contexts not yet discerned. Hospitality is achieved by creating empty classes, hence the notation of a natural classification must always be an infinite series. That these series differ in dimension is easily tested by comparing each unit of the series on a one-to-one basis, like counting on the fingers. If the series match, they are the same size. This leads to several conclusions that may be startling and in opposition to accepted fact. A whole is greater than any of its parts, but not necessarily if an infinite series is the whole. A sequential notation is a good example of this phenomenon. Infinite sequential series are formed by addition that reaches no ultimate number. Basically, the whole integers constitute a series formed by adding one to the sum of the previous number: $0 + 0 = 0, + 1 = 1, + 1 = 2, + 1 = 3, + 1 = 4, + 1 = 5$, etc. In library classification, the sequential notation may begin anywhere and, at least in theory, have no final number. This is most usually not the case, so that the Library of Congress Classification, although sequential, is not infinite because the final number in any given combination of letters and numbers is 9999. Empty classes may be created either by systematic avoidance of certain numbers (0, 1, and 9) or by alternate use. Libraries of the 19th century often used accession numbers as classification numbers, so that the original accession books were shelf lists and the classification accidental, utilizing an infinite series. If the accession book had utilized only the even numbers, empty spaces would have been created so that other books could be interfiled using the odd numbers. The two series are of equal size, even though odd numbers constitute a part of the series of whole integers. The rigidity of infinite discrete sequences, whether even numbers or odd or both, has led to problems in the numbering of items in book catalogs. Any attempt to insert an item between two numbers is doomed to failure once those items have successive numbers. Empty classes cannot be created except by guessing where expansion can occur. The Library of Congress Classification system uses an infinite notation, but this is accomplished by means other than those provided by a discrete set of numbers, finite or infinite.

The alphabetic arrangement of materials utilizes an infinite dense set simply by constructing a rule of arrangement. Since the alphabet may be considered the notation of a basing system using 26 characters rather than 10, the Arabic numbers can be arranged alphabetically. In fact, arranging them numerically is a semantic filing system that comes to grief when anything but numbers is arranged. In alphabetic arrangement, the number 11 follows the number 1, therefore the numbers created beginning with 1 will be filed together, no matter the size. When a library classification begins 000 and ends with 999, it may be either sequential or hierarchical, depending on the filing rules. In the Dewey Decimal Classification, the numbers are arranged as an infinite dense set that provides for infinite division of each number in the series. The decimal point is more or less a convenience, but it is not an essential feature of the notational system. The numbers are arranged alphabetically, in effect, before as well as after the decimal point.

Empty classes are very easily created in this system, each new number after the decimal point creating 10 new subclasses. Early theorists considered this a distinct advantage and thought that "infinite expansibility" is a desirable feature of classification systems. Knowledge was assumed to expand rather than change. However, the classification system was meant to provide for the systematic arrangement of books on shelves, and since there is only finite space, infinite expansion may be more a liability than an advantage. The problems of the Dewey Decimal Classification arise from this fact. Knowledge, as it is reported in libraries, does not simply expand, it changes in several ways besides. The boundaries between subjects and disciplines blur, and those between disciplines as well, so that music becomes a consideration of biological experiments, something that was never considered in the period when Dewey constructed both his classification scheme and this theory of classification. Each subsequent edition has had to take into account the changes in knowledge as they appear in information sources, often with severe dislocations so far as the previous edition is concerned.

An infinite dense set may expand, creating empty classes readily, but it cannot change the primary system of arrangement. This rigidity requires alteration of semantic contexts that makes previous arrangements unusable or at least extremely inconvenient. Knowledge is now assumed to be not a fixed arrangement of subjects and disciplines but a regrouping of information sources to which new information is added. It is constantly changing, in the sense that disciplines are a convenience to be avoided when not needed.

To achieve a notation that provides for an infinity of change without disturbance of structure, a kind of infinite series is needed that is larger and not so rigid as the infinite dense and discrete sets. Until fairly recently it was doubted that such an infinity existed. However, there is now no question. These infinite sequences lack a name so far and are dependent upon the notation meant to express them. Elsewhere in this encyclopedia the term "compacted sets" has been used. Such series cannot be created from a single notational base. Pure notation can only create infinite dense or discrete sets. The Universal Decimal Classification utilizes a compacted notation employing structural devices which must be considered different

from the Arabic numbers. Granting that the decimal point in the Dewey Decimal Classification is an ornament of no significance in the definition of the type of notation, the decimal point in the Universal Decimal Classification is an essential feature that permits the extension of subjects into new disciplines; in addition, the other structural signals, marks of punctuation, accomplish provisions of infinite change of the classification while the basic system remains intact.

In place of these marks of punctuation, which have the deficiency of not yet having acquired an inherent order, we may substitute letters of the alphabet but not Arabic numbers. Arabic numbers would create ambiguity, but letters of the alphabet do not. If in place of the decimal point, Dewey had used a letter of the alphabet, he would have created an infinite compacted set much larger than the infinity of his dense set. It can easily be shown that compacted sets cannot be put into one-to-one relationship with a dense set. There are always more numbers in the compacted set. Mixed notation always provides for greater infinities than pure notation.

When these possibilities of structure are arranged in fixed and limited order, a faceted classification, like that of Ranganathan, results. The faceted classificaton determines certain fields and requires that these fields be filled, if only with an indication that nothing is contained when the number creates an inapplicable semantic context for a given item. Faceted classifications have the advantage of providing access by any of the facets to any of the arrangements possible.

In all these kinds of notation, it must be observed that the notation provides for semantic contexts that may not be labeled because of deficiencies of natural language. This can happen in a sequence that potentially outruns the present, so that in numbers providing for chronological events, the creation of empty classes provides for events in the future which have yet to occur, let alone be named. Often in hierarchical notation a class is created that cannot be named and can only be labeled by a list of the contents of the class. Thus a class containing the subsections of rabbits, alphabets, geometrical patterns, and life expectancy of life forms would have no name, although such a class is entirely possible. In the Dewey Decimal Classification such hierarchies are abundant and are simply named by including the labels of the subjects contained (e.g., Philosophy, Psychology, and the Occult).

The potentiality of associations in the Universal Decimal Classification is so great that what can be constructed will probably never be named. The notation escapes the limits of language, which is always finite in the number of words provided though not in the number of arrangements possible. In designing classification systems, faceted classifications tend to be favored because the limits of association may be attuned to a given subject matter without constricting it, and the number of arrangements is much greater than the material to be classified requires. In expanding classification systems, it is necessary to avoid ambiguity so that the possibilities are somewhat limited by the previously determined notation. Even so, expansion is possible by moving further along the scale of infinities, from the small discrete set to the dense set, and from a dense set to an impacted set.

Although the rule of construction may require a pure notation, that is, not include both alphabetic and numeric characters, number-like series can be included, such as marks of punctuation, that will seem to maintain the purity of the graphemic base without restricting the further expansion of the notational system. The Library of Congress Classification is expanded by adding a dense feature—a decimal point which changes the sequences from a discrete set to a dense set—and by the potential of adding, or at least enumerating all the possibilities of the sequential notation as it is elaborated. Having up to three letters before four numbers that can be further subdivided by a decimal point and additional numbers beside two series of letter–number combinations, the total potential is incalculable—hence infinite—although the precise number of possibilities can be summed up for the sequential, or discrete, elements of the notation.

The purpose of notation in library classification is to provide an artificial language that will accommodate the semantic contexts needed for systematic arrangement. Natural classification always relates to the informational contents of the items to be classified, and these follow patterns of communication so far only dimly understood. A very fruitful field of investigation will compare the possibilities of natural classification with the requirements of communication within the world community and the changing understanding of what constitutes knowledge. While other kinds of notational patterns appear to be possible, they do not seem to be of much use in natural classification. Only one of these has been investigated to any extent, and this was found to be unwarranted by the informational contents of materials. This type of notation contains a negative feature, so that certain aspects of a class will be considered but not others—something like subtraction, the opposite of what is meant by an ampersand. Apparently semantic contexts can be labeled for what they contain, but only the labels can be changed to show what they do not cover. A kind of contradiction of terms is established that is not only unnecessary but undesirable. What was investigated, then, was not a different kind of infinite series but the operations possible within the series.

Semantic Contents

In the design of a natural classification, the notation becomes an artificial language that in large measure determines what labels will be given the semantic contexts created by elaborating the rules of the notation. These rules are very like those of the grammars of natural languages and even more like the rules of the languages usually called artificial, such as Esperanto, in that they are perfectly regular, without the exceptions imposed by tradition and the uneven changes characteristic of the history of a given natural language. However, the natural language used as labels of sematic contexts bears with it all the peculiarities of a history and a grammar that is more often irregular and filled with exceptions than totally predictable.

This explanation may seem to be exiguous, but no other accounts for the fact

that natural classifications are meant to provide access to the contents of information sources; these usually employ natural language as a medium of communication and if one or two terms sufficed to indicate the contents, there would be little reason for using more to express the subject matter. An author could write some small group of terms and express his omniscence adequately with marvellous economy. However, information sources are not the pronouncements of oracles. Very often they are exploratory, more important for the manner in which something is investigated than all the conclusions the author (or authors) reach. The notation creates an artificial language capable of expressing distinctions that often go beyond the natural language of the information source and, in any case, provide access to subject matter that the user of a library needs.

Natural classifications are at once independent of and constrained by natural language. The labels of semantic contexts are meaningless if they veer from the pattern of a given natural language, however irregular and imperfectly explained. The labels of semantic contexts, while incapable of precisely translating the term created by the notation, must nevertheless adhere strictly to the grammatical and idiomatic usage of the language employed. This has been missed quite often in the design of classification schemes, especially those in English, and accounts for the shabby indexing of some schedules in the Library of Congress Classification and some editions of the Dewey Decimal Classification. The semantic contexts must remain the same in the schedules and in the index, and the labels used to indicate these contexts, to provide a natural language key to them, must be identical in schedule and in index if the user of the scheme is not to be misled by the index, or frustrated by it, and perplexed by the schedules. The variance has been noted by several and analyzed in detail for the Library of Congress Classification (10). The most outstanding failure was the 17th edition of the Dewey Decimal Classification, which had to be recalled. The index was nearly unusable for the very reason that the schedules of the Library of Congress Classification differ in the quality of the indexing.

Because of the belief that subject headings differ entirely from classification terminology, many years elapsed before it was observed that the classification scheme should contain its own subject headings and that these should adhere to the established patterns of morphology of a natural language. Natural classifications for specialized fields have at times accomplished this, though no scheme has fulfilled what are the primary rules for such a unified approach to subject access. It has long been known that an index to a classified catalog or to a chain-indexed catalog is essential for the user and that this index may contain many terms that refer to the same term of the notation. All but one of these would be unused headings in a subject heading list when any of them may be ideal for a particular user. All can be included as the labels of a given semantic context, the one serving as index term that is most easily located, next to the notation, and the others serving as *see* references to the index term but including the notation that applies to the semantic context indicated. No change of form is possible if the natural classification is to be computerized in any way. The slightest difference between the

term used in the schedules and the term used in the index will create intolerable problems for the computer and for any program meant to relieve the designer of the classification of much drudgery. Human beings can make assumptions that the computer cannot be programmed to accomplish, so that schedule terms and index terms may differ in some degree before the user is frustrated. It is not desirable to impose on the user's facility with the natural language employed, in any case, and it is disastrous if some future computerization is foreseen.

The semantic context, then, is established by an index term and such other terms as are necessary because they are synonymous with the semantic boundary established by the term of the notation. This feature of natural classification plus the ease by which the notation can create empty classes prevents any intense destruction of the classification through semantic lag. Semantic lag is a feature of natural language that cannot be avoided, although measures can be taken so that the changes required do not alter the structure of the natural classification. Because the classification system eliminates the necessity for a complicated interweaving of subject headings through *see also* references, changes in the access to the classification scheme can be made readily. If computerized, new terms may be added, incorrect terms rearranged, and obsolete terms dropped as desired. This flexibility was available to libraries that used book catalogs, simply because each edition was *sui generis* so far as a subject classification was concerned. The computer has made the flexibility available again, but only if the terminology of the natural language is semantically controlled by the notation.

This can be explained by four features of semantics that can be observed wherever it is employed. First, there is semantic weight or semantic value. As the contexts in which a given word (or phrase) may be used increase, its value or weight decreases. The decrease in value may be as drastic as that observed in English syntactical words, sometimes called function words, that literally have no meaning save what is imparted by all of the contexts where they can be used. These are empty words, so far as semantic value is concerned. Other words are empty, even though not syntactical markers, because they exist only to fulfill requirements of the nominal structure. A term like "economic conditions" contains a prop word, "conditions" that has no meaning save that imparted by the adjective, "economic." It is required because the nominal structure will not allow for words with adjectival endings used as substantives without further change. The obverse of this is also observable in semantic color. A semantically valuable word tends to color all the other terms used with it to the extent that some may take on a new meaning simply by close association. Such a term as "creative activities in seat work" is dominated by the term "seat" with its reference to the human anatomy, even in extension. Although seat work is understood by teachers in the United States, the chances are that other professionals and other users of English will tend to gain an understanding of the term because of the word seat. Extensive semantic color can create ambiguities of meaning to the extent that a term is meaningless unless a wider context is shown.

This is achieved by semantic limitation. In natural language, the meaning of

the word is both intensional and extensional, that is, there is some inherent meaning, even for syntactic markers, but this is finally governed by the contexts in which the term can be used. Prop words characteristically have little semantic weight, but such meaning as may be conveyed is finally determined simply by their position with meaningful adjectives. The phrase so created is in turn limited by the wider context in which it is employed. Because language is always in a state of flux, especially where semantics is concerned, semantic limitation provides for exact usage of new terms needed as the variety of words increases. Semantic limitation both accounts for and ameliorates the fourth of the observable features of semantics, semantic lag. As new terms are created, they are used vaguely and interchangeably with other terms meant to express the same thing. However, contexts are created that finally control the terminology, making one term preferable and another wrong.

However, semantic lag is not simply a lack of precise terminology, but also change of value of terms. What has been a term without many referents becomes the center of an array of terms, and even the grammar of a natural language may be affected. This is especially noticeable at present, because technological and scientific advances—the increase of knowledge which is the ultimate purpose of all education—generally require a rearrangement of language. The American language, in Mencken's concept, is made up of new words and new uses of words that are scarcely predictable (*11*). A natural classification, then, must provide not only empty classes but new arrangements if it is not to become obsolete and unusable. How rapidly this can occur is evident in the history of the Lamont Classification, designed for the undergraduate library at Harvard University (*12*). In less than 20 years, the classification became totally unusable and had to be replaced. What has affected classification schemes most has been semantic lag, requiring new editions of the Dewey Decimal Classification and new schedules of the Library of Congress Classification. Other natural classifications have been even more drastically revised, for instance mathematics, and it is now possible to see how the depth of indexing may be reflected in a classification (*13*).

A natural classification may be general in nature, attempting to provide a subject organization for all the material in a general research library, as do the Library of Congress Classification and the Universal Decimal Classification. It may also be highly specific, like the classification designed for the National Library of Medicine, but following the pattern of the Library of Congress Classification in making provision for general classification within the special area. The question is really concerned with what the classification is supposed to arrange. The more specific the material, the greater the necessity for a highly detailed classification scheme. A moment's reflection will make this proposition seem eminently reasonable. A book is composed of the substance of many articles and may be given more general classification than each of the component parts. Articles have to be classified much more closely if the subject contents of the work is to be made accessible in any meaningful fashion.

Putting all this together, we can come to some immediate conclusions about

existing natural classification schemes and about the design of classification or the emendation of existing schemes. We can, in fact, prescribe how natural classification can be used to make a single, unified approach to the subject contents of works. We can, in fact, make some judgments about how a natural classification should be used, first by the classifier and then by the user. The ultimate test of any natural classification is in its use, in the successful provision of access to the subject contents of the works classified.

At the outset it is necessary to note that the actual material can be arranged in any manner that suits the regulations of a library. Material in closed stacks to which the user has no access is best arranged according to an artificial or accidental classification that will most economically utilize the space available. If this is done, then the catalog of the library must provide for an approach based on natural classification, whether a classified catalog, a chain index, or classified subject headings. The methods now employed, following Cutter's prescriptions, have been shown to be unworkable in virtually every detail (*14*).

Material in open stacks will use the natural classification first for the purpose of providing location symbols, so that the library becomes a kind of vast encyclopedia. This does not make the subject approach any less desirable, although it will generally be not so heavily used. Nevertheless, a classified approach to the contents of the works is necessary in some form other than the arrangement of the material itself. For many libraries, the only economical method of providing a classified approach is through classified subject headings. Otherwise, an unthinkable task of creating afresh the subject catalog of the library, when it may contain millions of items, is required. Libraries that have closed, or will close, their giant card catalogs can begin with a subject catalog in classified array, something more than a shelf list, without attempting to address the problem of the old catalog.

The Design of a Natural Classification Scheme

The first step is obviously an awareness of the material to be classified as represented in the information sources available at the time the natural classification scheme is contemplated. Quite often in a general library, a decision is reached to amplify or augment the natural classification scheme already in use. This is rarely necessary if the Universal Decimal Classification is employed because, of the three general classification systems discussed, it is the most flexible and most easily employed without the need for any local tinkering. A deficiency has been the lack of a fixed order for the marks of punctuation which provide the associative features of the classification. Many libraries using the classification have gone on the comfortable assumption that all these were not necessary, but as the library grows in size, the need for close classification is more sharply felt.

Another consideration is the expense of classifying material when the work is done at some national or regional center, often without cost to the library. Cataloging in Publication, the project of the Library of Congress to include the

portions of the catalog entry that cannot be obtained from the work of technical assistants or library assistants, makes the work of classification simple in a general library containing mostly books in English, and possibly French, German, Spanish, and Italian. Although Cataloging in Publication is not so far a universal approach to the problem of centralized cataloging, its use is spreading, and in the case of the more frequently used European languages, the Library of Congress provides the classification of such books in its card service. Whatever the desirability of a special classification scheme, the librarians in a general library, for instance a medium-size public or college library, must weigh the cost of close classification against the economies that centralized cataloging ensures.

Most locally designed classification schemes have been made for highly specialized collections with a clientele that is both sophisticated and limited. Special libraries that contain almost no material in about half the classes of a general classification are faced with a different evaluation of cost. Is it better to create a new scheme or to use one someone else created or to alter an available general scheme to make it more highly specialized? The question can be answered only by considering the way the users of the library are best served. In special libraries, the librarian takes on most of the effort left to the user in a general library. The librarian must find material for the user, and the classification scheme can greatly reduce the amount of effort this requires. Locally provided classification then becomes an economical way of organizing access to the material.

Supposing that the decision is made to create a natural classification scheme for the highly specialized material that must be fully analyzed if the library is to achieve the maximum degree of usefulness, the librarian's investigation of the material available will seek to discover how the authors organize their own works, what are the major classes and how they are organized. This utilizes the observed fact that natural classification bears a close relationship to the use of natural language for expository purposes. A disorganized work is very hard for the user to employ as a source of information.

This examination may be quite impressionistic at first, but at some point it will be found desirable to make definite notes, if not a sketch of the classification as found in the sources. This sketch will do much to clarify what kind of notational scheme will at once be sufficiently hospitable and economical. While an associative system provides greatest flexibility, it also incurs great difficulties of definition and usage. Faceted schemes are more desirable if the number of needed associations can be strictly limited. A purely hierarchical notation will often suffice—if not, associations of subject matter will be needed, and where possible, often within the associative or faceted scheme, both hierarchical and sequential arrangements are useful. Precise rules for the use of these notational devices are exceedingly abstruse and must be related to the practicalities of the particular situation in which they are to be used.

Having decided upon the nature of the scheme, the system of notation to be employed, and the major classes which constitute the facets or the primary classes of a hierarchy, the task next to be addressed is the choice of terminology. The

form is governed mostly by the peculiarities of the natural language used to express these terms, so that rules of form of schedule terms, hence subject headings, and index terms, must be derived from a profound understanding of the nominal structure of the language in which the terms are expressed. Some cautionary words about English seem to be in order because the traditions of subject analysis have created unnecessary problems.

Inverted terms that put a modifier after the head of a construction are likely to incur problems of structural ambiguity. The use of prepositions to express headings that are constructed by the classifier where no natural language term seems adequate are likely to mystify users. Marks of punctuation should be used to show the rather vague relationships between words that English prepositions represent. Unfortunately, the use of one preposition or another is so little governed by fixed rules that any true analysis of style over a period of centuries will show the wavering of taste and preferences by leading authors of the times. English prepositions serve as syntactical markers with a slender infusion of semantic value. Thus we distinguish between things lying on the box and in the box, but the distinction between arriving on time and in time cannot be explained in terms of semantic value.

Wherever possible the classification is made up of terminology drawn directly from the information sources in an order of preference for the simplest clear expression of meaning that can be found. In English this may be a single noun, but often cases of modification must be investigated, including nouns as modifiers and heads of construction. The injunction against inverted terms derives from the inability of the language to produce in written form the aural signals by which different semantic values are indicated. While "criminal statistics" is distinctly and irrevocably ambiguous in written form, when spoken aloud by a native speaker of the language, a difference is immediately understood by native listeners, who know whether the statistics are criminal or the criminal has statistics into which he fits.

The term which is placed next to the notation is the index term. All *see* references in the index must refer to this term, even though the term from which a *see* reference is made ought to include the classification number. This introduces a flexibility of arrangement which, along with a hospitable notation, can preserve the scheme from deterioration as knowledge progresses. A natural classification is rather like those ancient dwellings in Europe or Asia which have been altered as time and technology demanded, always comfortable and convenient by the standards of any given period. New terms as required may be added and terms dropped, so long as the index term remains the same, without any further attention to the structure of the classification. If the index term is changed, then the changes within the index may be effected simply and efficiently.

This is the primary reason why the classification of terminology is a necessity, along with the observed fact that the human mind remembers terminology by associations of meaning rather than by the inherent order of the alphabet. Further, the term that best suits can be indicated by the structure of the notation which brings terminology into close relationship by semantic value. Semantic lag can

affect a classification so drastically that it falls completely out-of-date and must be discarded, with attendant vast cost of reclassifying all the existing materials organized by the worthless scheme.

A further fact is that the techniques recommended here are admirably suited to computerization, not only for the material to be organized into an information retrieval scheme but also the scheme itself. By classifying the subject access to the information sources, the advantages of a classified system may be enjoyed although all access to the information sources is by means of search routines using whatever computer equipment is available. What makes a classified card catalog, or a chain index in card form, especially responsive to users is the arrangement of subject headings in classified order. These may be attached to the information sources and to the cards that represent them, or they may not. What is important is not the cards nor the sources but the access to them, and this is equal so long as the terms are classified in the first place and an adequate index to the classification is provided.

Conclusion

Natural classification is of ancient origins but of modern application, like natural language itself, on which and from which natural classification is based. Attempts to make the language serve by employing an inherent order of arrangement will fail as the size and complexity of the file of information sources grow. Access becomes more difficult as the user is faced with a large number of terms, not all of which he should be expected to know. The novice in a given field is primarily served by the subject access to material. The expert is more likely to rely on titles, perhaps, but especially on the names of other experts. Since in every field save his own, the expert is a novice, and the number of beginners in a field of knowledge greatly exceeds the number of experts, organization of material to provide maximum access at minimum cost demands the rather elaborate work of constructing and using a natural classification as the guide to all subject access. The preliminary work is slow and exacting, but it is ultimately a remarkably efficient way to save the time of the user of an information file and equally the organizer of the file, if he is sensitive to user needs and capacities.

The object of providing subject access is to ensure recall of material with a high degree of relevance for the amount of material obtained. No studies have confirmed that classified material will provide subject access with greater efficiency than other methods. In effect, now, some studies would be trivial, the complicated work of confirming the obvious; but Ebrami's preliminary study (15) in a language-free environment at least confirms the major propositions. The history of natural classification has done the rest, especially if the problems of subject headings are combined with those of existing natural language schemes where a notation may observably play a crucial role in the flexibility, usefulness, and responsiveness of a scheme.

Natural classification is, furthermore, especially adaptable to the technology of organization that would reduce the enormous labors of file systems and subject catalogs. The computer can deal especially well with a classification scheme, because many of the search routines can be developed within the notation, increasing the access to the material without complicating the methods by which the file is searched. Further experimentation along these lines will doubtless lead to exact statements of procedures. Although, as Maurice Tauber once said to a group of his students, "A lot of time and money are wasted on classification," even more money is wasted when subject access is not classified. At some point the entire scheme will break down. A poignant example of this can be found in the two National Aerospace Authority subject access thesauri. The slight differences of form were sufficient to make material organized by the first unsearchable by the second, even though it was meant to reduce the labor of searching and to increase the recall and relevance of material obtained. If the terms had been classified in the second place, these minute distinctions of form would have mattered not at all. In fact, there would never have been a need for a second thesaurus at all, as Manheimer's revealing study shows (16). Her analysis of the second thesaurus, which began as a comparison of technique of arrangement, ended as an analysis of the form of heading because of emendations that were not understood to have been crucial to the subject access of material.

A leading figure in the development of information science as a discipline, who need not be named here, once remarked to the present writer that subject headings need not be classified to provide access to material. That is true. In fact, the information sources need not be organized along subject lines at all if there are only a few of them, so that complete review of what is available takes but a short time. However, for a scheme that must keep pace with the change in the information sources, implying not only growth but alteration in the direction and reporting of research, a natural classification becomes the only efficient method of organization. We have learned this just in time to preserve computerized systems from the perils and final collapse of theory regarding the dictionary catalog and the use of subject headings.

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JAY E. DAILY

NAUDÉ, GABRIEL

Gabriel Naudé was born in Paris, on the 1st, 2nd, or 3rd of February 1600; he died in Abbeville on July 29, 1653. He studied medicine and for that purpose went to Italy in 1626, where he stayed in Padua, at that time one of the progressive Italian cities in this field, as well as in science in general. On his return to Paris, however, he became librarian to Président de Mesmes and was so attracted by this new profession that he abandoned—apparently without regretting it—his original career as a doctor. He was successively librarian to the Cardinal Bagni; to the Cardinal Barberini—in Italy again; then (for a very short period) to the Cardinal de Richelieu, at whose death he passed to the service of Richelieu's successor as Prime Minister of France, Mazarin. This was in 1642, and for the last 11 years of his rather short life, he built up, with Mazarin's backing, the finest and largest library in Europe (and even, maybe, in the world).

Naudé first bought the library of a deceased "chanoine," Descordes, which formed the nucleus of the new collection (August 1643), then enriched through

"bulk orders" passed by Naudé to book sellers which he personally ransacked during his "library journeys" in Picardy and Flanders (1644), in Italy and Switzerland (1645–6), again in Switzerland and even to Philippsburg, then in Holland and Britain (1646). Some 40,000 volumes were acquired—an enormous number for that date. What was perhaps even more important is that the new library was, from the beginning, open to every scholar ("aux doctes"), on each Thursday (1643). A special building for housing the collection was constructed (1646–7), on quite "modern" lines.

Unfortunately, political events turned rather suddenly against Mazarin: the "Fronde" was at first successful, and Mazarin's property was seized and the beautiful library sold by auction (1652), although Naudé had tried to avoid this by writing an *Advis à nos Seigneurs du Parlement* pleading against the dispersal of this unique collection. Soon after that, the tide turned, Mazarin regained his former power and prestige, and most people who had bought his books returned them to prove their (renewed) loyalty to the minister. But Naudé, heartbroken by the loss of his "ten years labour" (as he wrote in his *Advis*), left Paris for Stockholm on July 21, 1652, invited by the Swedish Queen, Christina, as Descartes had been 3 years before. This new experience, however, was rather painful, and Naudé decided to go back to France, but died on his return journey, without having the consolation of seeing the renewal of his cherished child: the "Bibliothèque Mazarine." After many changes, this library is still one of the most precious public collections in Paris: It is a branch of the "Réunion des Bibliothèques Nationales," beautifully housed in what was the "Palace of Four Nations" and is now the seat of the Institut de France.

Naudé was a prolific writer. Among other works, he published an extensive compendium of the pamphlets published during the Fronde for and against Mazarin, a book against witchcraft, and a most interesting work on public opinion, propaganda, and revolution—the very rare *Considérations politiques sur les Coups d'État*, printed in Rome for private distribution in 1639, which can be considered, indeed, as one of the earliest milestones, in Europe, of public opinion theory, in the line of Machiavelli. Perhaps more directly related to this encyclopedia's field is his *Bibliographia politica*, written in Latin and published in Venice in 1633, then in Wittenburg in 1641, and translated into French in 1642. So far as can be ascertained, it is the first bibliography which used the term "Bibliographia" and not, as its predecessors, "Bibliotheca." But the main product of Naudé's fertile mind, from the point of view of library science, is the *Advis au Président de Mesmes pour dresser une Bibliothèque*, which he wrote when he was just 27. This is the first scholarly treatise on library administration in a vernacular language (and not in Latin) and is still one of our "classics." It contains, among other things, a liberal theory of book selection, and a short but valuable essay on classification and cataloging, which deeply influenced the French practice in these matters and laid the foundations of the so-called "Système des Libraries de Paris," which culminated in Brunet's classification. The *Advis* was translated into English under the title of *Advice on Establishing a Library*.

Naudé was what we now call a "libertin"—that is, more or less a "free-thinker." He was, in Italy, a friend of Campanella and, returning to France, a member of the group of "liberals" centered around Gassendi. From that point of view, he is one of those who prepared the philosophical movement which gave to the next century its name of "Siècle des Lumières"—but he was in advance of his time and had to carefully protect himself by a cautious style, more or less disguising his "heretical" opinions in religious, political, and philosophical matters.

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ERIC DE GROLIER

NEBRASKA LIBRARY ASSOCIATION

The Nebraska Library Association (NLA) began its work at a meeting in University Hall on the University of Nebraska campus April 22, 1895. Convened by Mary L. Jones, university librarian, 16 librarians and others interested in library service (mostly from Lincoln, Omaha, and a few other cities) planned the first annual session, which was held in Lincoln at the time of the Nebraska State Teachers Association's 30th convention, December 31, 1895 through January 2, 1896. A constitution was adopted; dues were set at 50¢ a year; the theme of the meeting was "The Relation of the Public Library to the Public School"; and the following officers were elected:

President: Miss Mary L. Jones, University of Nebraska Library
First Vice-President: Miss Jessie Allan, Omaha
Second Vice-President: Mr. J. A. Beattie, Bethany University Library, Cotner
Secretary: Mr. J. A. Barrett, State Historical Society Library
Treasurer: Miss Carrie Dennis, Lincoln Public Library

Since the constitution of 1896, the original official purpose of the association has been altered only by the addition of one word and the change of another. "The purpose of this Society shall be to promote library interests in the State of Nebraska," from the 1896 constitution, in the 1968 revision became, "The purpose of this Association shall be to promote all library interests in the State of Nebraska." Throughout its history, the association has encouraged membership by any person, library, institution, or organization interested in its purpose and has had members from all kinds of libraries.

From the date of its organization, the Nebraska Library Association has participated and cooperated with other educational and civic organizations at both local and state levels in improving life for Nebraskans. From the first meeting in 1895/96 through the seventh in 1901, the annual conference was held at the University of Nebraska, Lincoln, in conjunction with the State Teachers Association. In 1902 the association met by itself in October at the Omaha Public Library and the following October went out of the two largest cities to the Fremont Public Library for a joint meeting with the Nebraska Federation of Woman's Clubs. The 1898 NLA program included addresses on "What Can the Library Do for the Woman's Club?" and "What Can the Woman's Club Do for the Library?" NLA still holds a paid membership in the Nebraska Council for Better Education.

The charter members of the NLA had as a chief ambition the establishment of a state system of traveling libraries and introduced in the 1897 legislative session a bill for the establishment of a library commission. This bill, which included no provision for funding, "went the way of most first attempts of this kind" (1). It was reintroduced in 1899 with a $2,000 appropriation request and supported by the legislative committtee of the State Teachers Association, as well as some women's clubs, but again failed to pass. However, with the solid backing of the Nebraska Federation of Woman's Clubs, a bill carrying a $4,000 biennial appropriation became law in June 1901 and the work of the Nebraska Public Library Commission began on November 11 of that same year. The purposes of the commission were to encourage the establishment of libraries, improve those in existence, collect and report facts about libraries, and, if deemed wise, purchase and loan books. James I. Wyer, NLA president in 1899–1900 and librarian of the University of Nebraska, became the first president of the commission. He and the secretary, Edna Bullock, a graduate of the New York State Library School, secured a temporary office in the capitol building, collected the study library of the Federation of Woman's Clubs, and began circulating the books as traveling libraries.

From the time of its inception, the Nebraska Library Association served to bring together the librarians and publicize the activities of the various kinds of libraries in the state. The Kansas–Nebraska Act of May 30, 1854 had provided

for a state library; the office of state librarian was created in 1867 with the secretary of state as the ex officio state librarian (2). In 1871 there were two divisions of the state library: the miscellaneous material under the secretary of state; and law, under the clerk of the supreme court. The Nebraska State Historical Society Library dates back to 1878. The oldest association library, a library supported by a group of individuals rather than by taxation, was the Omaha Library Association, established in 1871. It opened a reading room to the public for the first time in February 1878. The University of Nebraska Library was organized by a professor in 1871, 2 years after the university was founded, but did not have a trained librarian until 1892, when Mary Jones was hired and began classifying the collection by the Dewey Decimal system and cataloging it. Lincoln organized a subscription library and reading room in 1875, which became Lincoln Public Library in 1877, and built the first Nebraska Carnegie building in 1901. Crete, which organized a library in 1878, is the oldest of the small town libraries in the state; and Fremont, in 1903, erected the second Carnegie building. Librarians from these early libraries were active in the Nebraska Library Association by serving as officers and speakers at annual conventions and on committees.

The Nebraska Library Association showed its interest in the national organization by inviting the American Library Association (ALA) to hold its annual meeting in Nebraska in 1898. This invitation, as well as a bid for the 1900 conference to be held in either Lincoln or Omaha, was declined. NLA voted to affiliate with ALA in 1914, has had an ALA councillor on its executive board since 1921, and became a contributing chapter in 1932. The 1904 state meeting was not held because the members were encouraged to attend the national ALA conference in St. Louis. Nebraska librarians have also held joint meetings with neighboring states, joined in regional meetings of ALA, and has an elected representative to the regional Mountain Plains Library Association (MPLA). Besides the regular MPLA conferences, joint meetings include the following: 1907, with Iowa; 1922, Kansas and Missouri; 1925, Iowa, Minnesota, Missouri, North Dakota, and South Dakota; 1930, Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin; 1932, Iowa, Kansas, Minnesota, and Missouri; and 1960, Iowa.

From the charter list of 10 official NLA members between April and December 1895, the membership reached the all-time high of 722 in 1969 and in 1974 was 668. The dues have increased slowly from the original 50¢ a year, to $1.00 in 1905, $1.50 in 1921, from $1.50 to $3.00 based on a salary scale (up to $1,500— more than $3,500) in 1948, to the present scale from $4.00 to $12.00 (on salaries from up to $3,000—more than $10,000) adopted in 1971. Membership has consistently included professional librarians from all kinds of libraries, library workers, trustees, and friends of libraries. The association has presented three distinguished service memberships and 23 honorary life memberships.

In 1966 the NLA filed Articles of Incorporation under the Nebraska Nonprofit Corporation Act. The board of directors of the association includes the president, who serves a 1-year term; vice-president, who becomes president after 1 year in office; secretary and treasurer, who serve 2-year terms; the past president; ALA

councillor; chairmen of the sections; and the director of the Nebraska Library Commission. The executive secretary of NLA is a nonvoting member. The five sections, all of which hold meetings at least once annually, are for trustees; public; college and university; special and institutional; and school, children's, and young people's librarians. Standing auditing, budget and finance, citations, constitution, federal relations, legislation, membership, nominations, personnel, and resolutions committees are appointed by the president. Special committees presently functioning include those for National Library Week, intellectual freedom, *NLA Quarterly*, convention arrangements, and coordination with the Nebraska Educational Media Association.

The appointment of a half-time Executive Secretary, Louise B. Shelledy of Lincoln, in January 1970 strengthened the association by providing continuity, in spite of the changing leadership of the organization. She also edits the quarterly journal.

Most visible of the activities of the Nebraska Library Association are its meetings. Fall conferences have been held annually except for the World War II years, when travel was restricted, or when preempted by ALA national or regional conferences held in cities within easy travel distance for Nebraskans. District meetings in the spring, cosponsored by the Nebraska Library Commission, have been held regularly since 1932. There was an earlier meeting in Fairbury in the spring of 1921 for librarians and trustees; six district meetings in April and May 1926 served as the year's gathering for NLA members who were unable to attend the ALA semicentennial conference in Atlantic City. Because many from the small libraries of the state do not attend annual meetings, the district meetings have been beneficial. Their programs frequently are workshop sessions.

The list of annual meetings, sites, presiding officers, and major themes, quoted or supplied from conference programs, gives an overview of the emphasis and leadership NLA has had since its founding:

1895 Lincoln   Mary L. Jones, Lincoln   "The Relation of the Public Library to the Public School"
1896 Lincoln   D. A. Campbell, Lincoln   "Traveling Libraries"
1897 Lincoln   W. E. Jillson, Crete   "The Influence of the Library in the Community"
1898 Lincoln   W. E. Jillson, Crete   The Library and Woman's Clubs
1899 Lincoln   James I. Wyer, Lincoln   Library Legislation
1900 Lincoln   James I. Wyer, Lincoln   Nebraska Libraries—Cooperation and Progress
1901 Lincoln   Edith Tobitt, Omaha   "Report on Libraries of Nebraska for 1901"; The Library Commission
1902 Omaha   Edith Tobitt, Omaha   "The Use of the Library by the Schools"
1903 Fremont   Rachel Berry, McCook   "Library Opportunities" (address by John Cotton Dana)
1904 No meeting, ALA in St. Louis   Rachel Berry, McCook
1905 Lincoln   Edna D. Bullock, Lincoln   Reference Works in a Small Library
1906 Lincoln   George H. Thomas, McCook   Library Problems; Practical Work of Trustees

1907 Omaha–Council Bluffs   Joint meeting with Iowa   George H. Thomas, McCook   Books for Various Kinds of Readers   (A. E. Bostwick, ALA president)

1908 Hastings   W. K. Jewett, Lincoln   Fiction Cataloging and Other Practical Topics   (H. W. Wilson and Mrs. H. L. Elmendorf, ALA vice-president)

1909 Beatrice   Charlotte Templeton, Lincoln   The Library and the Public

1910 Lincoln   Anna V. Jennings, Kearney   Rural and County Libraries

1911 Omaha   L. F. Haller, Omaha   Practical Library Problems

1912 Lincoln   Nellie J. Compton, Lincoln   Nebraska Library Survey   (Hannah Logasa)

1913 Omaha   H. C. Lindsay, Lincoln   Library Methods

1914 Geneva   Elizabeth Smith, Chadron   Township vs. County Libraries

1915 Fremont   Nellie Williams, Geneva   "What the Trustees Expect from the Librarian"

1916 Lincoln   Malcolm G. Wyer, Lincoln   Libraries—Kinds and Methods of Operation

1917 Kearney   Malcolm G. Wyer, Lincoln   Libraries and the War

1918 Lincoln   Annie C. Kramph, North Platte   Library War Service

1919 Omaha   Elva E. Rulon, Peru   "The Book That Has Interested the Most in the Past Year"   (Chalmers Hadley, ALA president; Mae Massey)

1920 Lincoln   May Ingles, Omaha   Nebraska Library Commission—Aims and Means of Service

1921 Grand Island   Josephine Lammers, Lincoln   Books for Farmers, Farm Women, Business Men, etc.   (Frederic G. Melcher)

1922 St. Joseph, Missouri   Joint meeting   Loretta M. Brownfield, North Platte   Library Revenue; Reaching the Community

1923 Lincoln   Lulu Horne, Lincoln   Library Problems

1924 Omaha   Clara L. Craig, Lincoln   Public and School Library Cooperation

1925 Sioux City, Iowa   Joint meeting   Bertha Baumer, Omaha   Library Methods   (C. F. D. Belden, ALA president; Carl Milam)

1926 No meeting, ALA Semicentennial   Ethol M. Landon, Lincoln

1927 Lincoln   Ethol M. Landon, Lincoln   Library Personnel

1928 North Platte   Eleanor M. Wheeler, North Platte   Adult Education

1929 Beatrice   Anna D. Johnson, Madison   Books and Reading   (May Lamberton Becker)

1930 St. Paul, Minnesota   ALA Regional   Gilbert H. Doane, Lincoln

1931 Omaha   Nellie M. Carey, Lincoln   County Libraries

1932 Des Moines, Iowa   Joint meeting   Nellie Wilson, Scottsbluff

1933 Lincoln   Mary Woodbridge, Omaha   Library Finances and Cooperation

1934 Kearney   Marguerite Nesbit, Hastings   Library Planning   (C. H. Compton, ALA president)

1935 Lincoln   Helen Meisinger, Lincoln   (vice-president, for Madaline Hillis, Omaha)   Library Legislation

1936 North Platte   Hilda Hammer, Omaha   Statewide Library Service

1937 Omaha   Anna V. Jennings, Kearney   Library Planning

1938 Fremont   Catherine Beal, Omaha   Certification; Federal Aid   (Milton S. Ferguson, ALA president)

1939 Hastings   Bernice Gantt, Lincoln   Library Personnel and Recruitment; Nebraska Union Catalog

1940 Lincoln   Stephen McCarthy, Lincoln   Library Surveys; Federal Aid

1941 Grand Island Ellen D. Smith, Hastings Library Publicity; Service to
      Young Adults
1942 Omaha Naomi W. Ellsworth, Fairbury Libraries in Relation to War
      and Peace (Charles H. Brown, ALA past president)
1943 Des Moines, Iowa Regional Institute with Iowa Lois Crouch, Wayne
1944 District Meetings Magnus K. Kristoffersen, Lincoln "Preparing for the
      Postwar World"
1945 Lincoln Margaret E. Rutledge, Lincoln "Librarians Need to Plan To-
      gether"
1946 Omaha Helen M. Gorder, Grand Island "Back to Normal"
1947 Lincoln Ruth D. Harris, Hastings Personnel; The Tax Dollar
1948 Omaha Laurine Anderson, Auburn Library Methods
1949 Ft. Collins, Colorado Regional ALA Conference John C. Settlemeyer,
      Lincoln
1950 Lincoln Frank A. Lundy, Lincoln Library Survey; Legislation
1951 Omaha Yale K. Kessler, Wayne "Our American Heritage"
1952 Kearney Alice F. Paine, Kearney "The Regional Viewpoint"
1953 Lincoln Kathryn J. Gesterfield, Scottsbluff "A Forward Look"
1954 Omaha Dorothy W. Lessenhop, Lincoln "Building for the Future"
1955 Scottsbluff Ellen Lord, Omaha "The Library and the Community"
1956 Lincoln Ruth A. Mildner, Wayne "Dreams Into Reality"
1957 Omaha Frank E. Gibson, Omaha "Look Ahead"
1958 Fremont John B. White, Lincoln Library Resources (Grace Stevenson,
      Verner Clapp)
1959 Hastings Edith P. Stickney, Fremont "Working Together to Serve Better"
1960 Lincoln Alma Wickman, Norfolk "Libraries and You"
1961 Omaha Harriet Lute, North Platte "New Horizons for Nebraska Li-
      braries"
1962 Lincoln Helen Oeschger, Omaha "Patterns for Progress"
1963 Hastings Ola Almquist, Valentine "Libraries Are for People"
1964 Lincoln Kathryn R. Renfro, Lincoln "The Challenging Sixties"
1965 Omaha Lois W. Collings, Lincoln "Changing Concepts of Library Serv-
      ice"
1966 Lincoln John Kopischke, Scottsbluff "Centennial Eve: Planning for the
      Next 100 Years"
1967 Omaha Jane L. Pope, Lincoln "Toward Total Library Service in Ne-
      braska"
1968 Lincoln Raymond B. Means, Omaha "You and Your Task in Nebraska
      Libraries"
1969 Omaha Laura Berge, Scottsbluff "Social Action in Hard Covers"
1970 Lincoln Gretchen Lainson, Hastings "New Directions; Enduring Goals"
1971 Omaha Kathlyn K. Lundgren, Scottsbluff "Nebraska Library Year"
1972 Kearney R. W. Brown, Sidney "People Serving People"
1973 Lincoln Vivian A. Peterson, Fremont "Your Library—A Good Place
      to Grow"
1974 Omaha Reta King, Chadron "Cooperation and Coordination Among Li-
      braries"

A primary concern of the Nebraska Library Association has been legislation.
The first major legislative work was discussed at the first annual meeting in

1895/96 and, at the second meeting, a committee of five members was appointed to formulate a plan and draw up a bill for the establishment of traveling libraries and a state library commission. The passage of the bill on June 28, 1901, after two unsuccessful attempts, attests to the seriousness and persistence of the association. Later occasions arose when NLA members helped enact legislation relating to the commission. In 1911 the state legislature granted funds to the Nebraska Public Library Commission (NPLC) to establish libraries in penal and charitable institutions. In 1923 NLA sent to the legislature a resolution of concern for adequate appropriations to continue the support of the commission's programs. When the commission's appropriation was reduced to its 1915 level in 1931, and 2 years later when the governor, elected on a platform of economy in government, abolished the commission and transferred its activities to the University of Nebraska Library without providing supporting funds, NLA again became actively involved in legislative action. NPLC was reestablished in 1935 with an added appropriation and the next year moved its headquarters back to the capitol building from the University of Nebraska campus, where it had functioned since 1921. Again in 1953 the abolition of NPLC became a legislative concern, but the bill was killed soon after its introduction. The NLA president was among those who testified against it. With support from the association, the NPLC executive secretary's maximum salary was raised by the legislature in 1961; and in 1972 the name of the commission changed to Nebraska Library Commission, to more accurately denote its broad duties and concerns. The most recent legislation provided for the establishment, on July 1, 1972, of the Nebraska Publications Clearinghouse at the commission to supplement its regional depository of U.S. government documents.

Federal legislation on which the association and commission have united efforts also include: minimum salary for librarians (1948); Library Demonstration Bill, which failed Senate passage by three votes with a Nebraska senator leading the fight against the bill because he felt it was a state rather than a federal responsibility (1950); reduced postage rates for library materials (1953); and the Library Services Bill (1956).

United support also contributed to the passage of state library legislation. In 1935, Senate File 272 permitted two or more counties to form regional libraries upon vote of the county or region; in 1941, Legislative Bill 37 provided that only those people living outside a village, city, or township already maintaining a library by public taxation should vote on the establishment of county or regional libraries and L.B. 427 permitted library boards to sell real estate owned by public libraries or their boards which was not being used for library purposes; and in 1951, L.B. 189 permitted villages, cities, and townships to raise mill limits for library support to 2 mills and L.B. 264 made federal Social Security a possibility for librarians if local governments agreed to participate.

NLA appointed a Federal Relations Committee in 1953 with one member from each Congressional District. This was in addition to its State Legislative Committee already in existence.

The library extension work of the Nebraska Library Association has also been

an important part of its activities. It has been done in close conjunction with the Nebraska Library Commission. Between the traveling libraries and association collections of the 1890s and the regional network of the 1970s lies an immense development program. In addition to the continuous efforts of local communities, state officials, librarians, and all Nebraskans concerned with library improvement, special programs have been carried out. Three surveys have been conducted and followed by development plans. The first was a questionnaire survey planned by the NLA Committee of Five appointed in 1923 for the formulation of plans and collection of information from public libraries. Institutes relating to the survey were conducted by the commission in 1923 and 1924 prior to the annual NLA meetings. The questionnaire, which was sent to public libraries twice in successive years, surveyed staff training and experience, membership in NLA and ALA and attendance at meetings, board support of professional activities, budget and tax levy information, and book selection aids and procedures. A comparative study of the results of the two questionnaires showed some improvement in library support and management and made librarians and their boards more conscious of standards. The Committee of Five was disbanded in 1927.

The second survey was conducted in anticipation of the passage of the Library Services Act. The act, and federal funding from the Library Services and Construction Act (LSCA), gave great impetus to public library development in Nebraska. The state plan for the use of LSCA funds was based on the needs revealed in the Survey of Library Service, 1955–1956, and the annual reports of public libraries for the 10-year period prior to the survey. The 5-year plan is described in *Nebraska State Plan for the Library Services Act*, prepared by the commission staff and the NLA Planning Committee (1956).

The third and most extensive survey was conducted by a professional team of four under the direction of Harold Lancour on the recommendation of the association's Nebraska Library Development Committee. The team's findings and recommendations and the development plan which followed are recorded in four publications:

Nebraska Libraries Face the Future; A Report of a Comprehensive Survey, 1961, 137 pp.

Nebraska Libraries Face the Future; A Summary of the Survey Report, 1961, 5 pp.

Regional Organization for Nebraska Libraries; A Plan with Minimum Standards, 1962, 18 pp.

Ibid., revised edition, 1967, 27 pp.

On July 1, 1971, the NLA Development Committee was replaced by the Nebraska State Advisory Council on Libraries, "an appointed group of interested citizens and librarians" (*3*). They are assisting the Nebraska Library Commission in implementing the current 5-year development plan which is introduced in *Planning to Plan* and developed in *People Serving People; A 1977 Long Range Program for Nebraska Libraries (4)*.

To stimulate the improvement of library service by upgrading the professional competence of library staff members, NLA attempted unsuccessfully to encourage

the 1936 state legislature to pass a certification law. A voluntary certification plan, adopted the previous year, was continued and still exists. By 1969, 352 certificates had been issued. There is no record of any later applications. The certification fee was put into a scholarship fund to provide assistance for advanced study in librarianship. The scholarship fund and a loan fund, established in 1939 by NLA and supported by honorary life membership fees and a per capita percentage of membership dues, were combined in 1972, and the association grants loans regularly as funds allow.

In recognition of special service and as an encouragement to greater achievement, the Nebraska Library Association presents three awards: (1) Meritorious Service recognition to individuals or groups who have made special contributions to the improvement of library service in a community, county, or state, or in library legislation; (2) Trustees Citation to an individual or board for distinguished service in their library; and (3) Mari Sandoz Award for a person who, because of his writings, film production, book reviews, or similar activities about and in Nebraska, is considered worthy of an award named for Miss Sandoz. The Meritorious Service Award has been given annually since 1961; Trustee Citation to 12 recipients; and Mari Sandoz Award to Dr. John J. Neihardt, poet laureate of Nebraska, in 1971; to Dorothy Lessenhop in 1972; and jointly in 1974 to Bernice Slote and Lucia Woods for their book, *Willa Cather; A Pictorial Memoir.*

In addition to the library improvement and extension efforts, which were substantial and long-term, many educational projects have been supported. Special institutes have been held; information about in-service training courses, library education programs, summer workshops, and other varied opportunities have been publicized and encouraged by the NLA and the commission. Though there is no graduate library school in the state, the Lincoln and Omaha divisions of the University of Nebraska and several of the state and private colleges offer undergraduate courses in library science.

Because the Nebraska Library Association and the Nebraska Library Commission have worked so closely and interwoven their activities so frequently, a list of publications about the association must also include those of the commission.

Early records of the association are contained in the minutes kept by the secretaries and preserved with the manuscripts in the State Historical Society Library. The earliest published reports, programs, and communications from the NLA are in the Nebraska Public Library Commission's *Biennial Report* (1st–14th, 1902–1928) and its *Nebraska Library Bulletin* (No. 1–7, February 1906–March 1908). NPLC biennial reports and NLA annual and district meeting announcements for the period from December 1928 through 1932 are found in the *Nebraska Public Library Commission Bulletin* (Vol. 1–2, January 1931–June 1933). From 1933 to 1969 the reports of the commission were again published as Nebraska Public Library Commission *Biennial Report.* Following this was "The First 365 Days; A Report of the Nebraska Library Commission," by Robert E. Kemper, director (5). A 5-year report is currently being prepared for publication by the

NLC director. During the period from September 1935 through December 1969, NLA news and reports were included in the Nebraska Public Library Commission *Newsletter*, which was published monthly through 1941 and quarterly thereafter. Three issues of *The NLA Bulletin* were published from March 1944 through March 1945. Printed association reports were issued as Nebraska Library Association *Annual Reports* (1959/60–1968/69), but they have since been incorporated into the *Nebraska Library Association Quarterly*, which began regular publication in the spring of 1970 and has a current circulation of about 800.

Other publications of the NLA, its sections, committees, and members include the following:

Nebraska Library Association, *Books of Local History of the North Platte Valley*, prepared by Nellie Wilson, 1938, 6 pp.

Nebraska Library Association, *Coordination of State Supported Library Activities in Lincoln*, published in accordance with a resolution passed at the 22nd annual meeting, 1916, 11 pp.

Nebraska Library Association, *Current Non-Administrative Publications of the University of Nebraska*, compiled by Ruby C. Wilder, 1938, 3 pp.

Nebraska Library Association, *Directory of Librarians and Handbook of the Association*, compiled and edited by the staff of the Nebraska Public Library Commission, 1942, 32 pp.

Nebraska Library Association, *Directory of Librarians and Trustees of Nebraska Libraries*, 1950, unpaged.

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Also significant are publications issued by the Nebraska Public Library Commission and other state agencies which relate to NLA activities, programs, and sections. They are as follows:

Hemphill, Franklin, "The Nebraska Public Library Commission; A Survey of Its Operation," M.L.S. thesis, Rutgers University, 1960, various paging.

Nebraska, Department of Public Instruction, *A Library Book List for Elementary and Secondary Schools in Nebraska; A Guide to Basic School Library Literature and Efficient Library Administration*, 1945, 201 pp.

Nebraska Library Commission, *Grants and Grant Processing*, Lincoln, 1972, 79 pp.

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Nixon, Louise Aldrich, *History of the Nebraska Public Library Commission*, University of Denver, 1950, 28 pp.

Radcliffe, Walter H., and Robert E. Kemper, *Contracting: A Library Cooperation Tool*, Bailey Lewis & Associates, Lincoln, 1972, 47 pp.

"Rural Library Service," *Nebraska Agriculture*, 17, 5 (January 9, 1947).

The Nebraska Library Association, after 80 years of work in close cooperation with the Nebraska Library Commission and other educational and civic organizations, continues to involve its members in plans, activities, and programs to increase library services and thereby to improve the quality of life for Nebraskans.

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VIVIAN A. PETERSON

NEBRASKA, UNIVERSITY OF NEBRASKA LIBRARIES

Background

The University of Nebraska in Lincoln, Nebraska was established by the state legislature in February 1869, 2 years after Nebraska became the 37th state. During its territorial years from 1854 to 1867, the legislature had chartered at least 23 colleges, academies, and universities. Most of these never actually came into existence, their promoters rarely being able to carry them beyond the stage of paper colleges. At least four charters for a university were issued during this period. It was not until the passage of the Morrill Land Grant College Act of 1862, however, that the real prospect of sustained financial support gave Nebraska leaders the needed encouragement to establish a state university.

The end of the Civil War brought statehood to Nebraska in 1867, and a move of the territorial capital from Omaha to the new state capital in Lincoln. One of the first actions of the 1869 legislature was to create by charter the University of Nebraska. In the 1867 legislature the agreement had been reached that Nebraska, unlike the majority of states—which had both a state university and a state agricultural college—was to have a single institution combining the two functions. Four square blocks on the north edge of the raw frontier village were set aside for the university campus. A second plot of land 3 miles from the main campus was acquired soon thereafter for agricultural activities.

The first building was begun the following year, a chancellor and four other faculty were appointed, and in September 1871, 130 students began attending classes. Only 20 students pursued regular college course work during the university's first year, the other 110 were enrolled in the preparatory department. The Latin School, as the preparatory department was called, was intended as only a temporary necessity in which students not qualified for university work could remedy their deficiencies, but it had to be continued for many years to prepare rural youth for university level studies.

Despite the need to maintain its preparatory department, the university was

able to expand into postgraduate offerings. In 1883 study for the master's degree in history was authorized, and in 1890 the regents approved a history Ph.D. program. In 1896 the University of Nebraska became the first major institution of learning west of the Mississippi to organize a graduate school, and by 1903, 24 departments were offering graduate work. The university in 1909 was admitted as the 18th member to the Association of American Universities.

The library was housed in the university's first building, University Hall. As the collection grew, additional space was given over to the library. In the earliest years the collection was largely a "reference library" used almost exclusively by faculty members. The collection was small—1,200 volumes after a year—and in a few years the students were grumbling because the library was open only a few hours a week. In 1878 the library responded to the complaints and was open from two to six each afternoon.

For the first several years the direction and management of the library was in the hands of a library committee of faculty members whose chairman performed, to some extent, the duties of a librarian. In 1886 Miss Ellen Smith was named librarian in addition to her assignment of registrar. Nine years previously Miss Smith had been the first woman on the university faculty, as an instructor in Latin and Greek. During this period it was realized that the library program needed vast improvement. A library building was "next on the list," for additional books were needed, and the students needed a place to study. It was not until 1891, however, that the legislature approved some funds for a library building. The building was begun in the same year but could not be used in its incomplete state. The 1895 legislature passed an additional appropriation of $73,000 for the completion of the library. The building opened for use in December of that same year and was hailed as "one of the best-appointed university buildings of its kind in the United States."

James H. Canfield, chancellor from 1891 to 1895, recognized that the library program was not growing in a way to keep pace with the plans for the university's growth. He also recognized the importance of having the library carefully organized before its increasing growth should make organization more difficult. In 1892 he appointed the university's first professional librarian, Miss Mary L. Jones. Canfield's understanding of the important position of libraries within universities brought him at the turn of the century to accept appointment as librarian of Columbia University.

Librarians

Mary L. Jones, Nebraska's first professionally trained librarian, was a graduate of the Albany Library School. She began in 1892 to reclassify the collection to the Dewey Decimal system; began the first library catalog in card form; and generally applied the latest library techniques to make the library more usable for students and faculty. The chief librarian during part of this period was a professor of

Greek who became too deaf to teach. Miss Jones was the assistant librarian until 1895 when the new chancellor, McLean, made her acting librarian, "telling her he should secure a man librarian as soon as the University could pay a fitting salary." She resigned in 1897.

A year later James I. Wyer was appointed acting librarian and Assistant Professor of Bibliography, and in the following year was made librarian. In his 7 years he developed the collection rapidly from about 20,000 volumes to near 75,000. He organized the Agricultural College Library on the "farm" campus and devised an expansion of the decimal system, which has been used widely by other agriculture libraries.

In 1906 J. I. Wyer was succeeded by Dr. Walter K. Jewett. Jewett had been a physician; he was a graduate of Brown, the Harvard Medical School, and most recently the Albany Library School. He continued the careful selection of books and in a bit more than 6 years the collection grew to 100,000 volumes. Due to the pressures of very heavy use by the students, he established a closed reserve system and also reluctantly closed the stacks to students.

Malcolm G. Wyer became librarian in 1913 and was given the rank of professor 2 years later. Under his direction the collection doubled in size in 12 years. The rapid growth of the collection and the heavy use by students and faculty caused the first severe space shortage problems. Wyer moved parts of the collection into departmental libraries and into storage, and he moved the reserve desk operation out of the library building. His space problems became familiar ones, for the university was to be plagued by similar and even more severe space shortages in its libraries for more than a generation.

Gilbert H. Doane succeeded Malcolm Wyer in 1926. After his first year he reported to the university and the alumni that there was not sufficient shelf space for the book collection. "We have been obliged to place some 20,000 in storage thereby making them immediately inaccessible." The space situation continued to worsen, especially because of the economic depression in the early 1930s, for among the economies the university had to accept was a postponement of all construction and most building maintenance. The library program suffered from the depression in yet another way. In late 1933 several senior professors sent the chancellor a letter pointing out "the discovery that our library is now unable to make any new book purchases has produced a deep and common concern upon the part of the members of the faculty." In the following year the Library Committee reported on its survey of the library situation with special emphasis on space considerations. The library collection of 285,820 volumes was distributed in 27 separate places. Seven of the libraries were supervised by the library staff, as were three basement storage rooms. Six departmental libraries were supervised by teaching departments. Another six departmental libraries apparently had no supervision or were locked, and at least eight additional small "seminar" collections were housed in classrooms. In addition to these 27 locations, there were 10 or more small departmental collections not recorded in the library's union catalog. It was not until after Doane's decade at Nebraska that relief from the crushing

space problem was in sight. In spite of the low level of funding during Doane's time, the collection grew from just over 200,000 to just over 300,000 volumes.

Robert A. Miller, who succeeded Doane in 1936, vigorously attacked the space problem, which by that time had resulted in the library's collections being scattered and badly housed throughout buildings on both Lincoln campuses. Equally important, he worked for and gained approval for an administrative reorganization of the university's library collections and services. With the help of the Library Committee, Miller pushed the planning for a new central library building. A gift from Don L. Love, a former Lincoln mayor and prominent businessman, came at a crucial time. In early fall 1940, the Board of Regents assigned the Love fund to the library; architectural plans were approved the next spring. Construction on the Don L. Love Memorial Library was begun in May 1941 with plans to open for the fall term 1942.

In anticipation and preparation for the move into the new central library building, Miller proposed two major changes. The first was to place the authority and responsibility for *all* the university's library collections under the supervision and direction of the university librarian. Effective July 1, 1939, all departmental expenditures for books and journals were centralized in the university library; the monies previously spent for books and journals out of departmental maintenance funds were transferred to the library. Miller's second proposal was to centralize the collections to a large degree. The Library Committee in late 1937 endorsed his policy, which was: "subject to the approval of the Board (of Regents), separate libraries may be maintained . . . by professional colleges . . . whose graduates are required to be licensed by a state board or court to practice." The acceptance of these two major changes led the way for a better administration of the libraries on the two Lincoln campuses and the medical campus in Omaha in the years after the new central library building came into use.

Stephen A. McCarthy succeeded Miller in 1942 and in his 2 years as librarian maintained the direction Miller had set. The Love Memorial Library building was completed during McCarthy's tenure, but was not to be used as a library until after he had left Nebraska. Upon its completion in early 1943, the building was turned over to the U.S. Army to house its specialized training program and to be used as a barracks. The building was occupied as a library in the fall of 1945.

Frank A. Lundy was appointed director of libraries at Nebraska in the fall of 1944. He carried out the collection consolidation program proposed by Miller. All the storage collections and many of the small departmental collections were brought into the central library. But space problems continued to be a very serious concern for the library administration, and by the early 1960s the exodus of books out of the main library into semistorage areas had begun. Inadequate funding of the library program, which lay behind the lack of space for volumes and students, also caused a general decline in library service. "Because of inadequate support at this time (early 1960s) by the seventies the University of Nebraska faced a library crisis of major proportions" (Sawyer, p. 218).

During the Lundy years the library collections grew from 400,000 to well over a million volumes. Expenditures for library materials rose from $37,000 in 1944–45

to $950,000 in 1970–71. The professional staff during the same period grew from 21 to 55; and the full-time supporting staff from eight to 106.

Two major buildings were planned and built during the Lundy years at Nebraska. The C. Y. Thompson Library on the East Campus was opened in 1964 with hopes of making it "a second university library." A new library structure on the campus of the Medical Center in Omaha was completed in 1971. The Undergraduate Library, created by the renovation of 60,000 square feet in a large university building in the dormitory area, was planned to ease the severe shortage of library space in the late 1960s. A third major library structure planned by Lundy was a large expansion of the Love Library. The building addition was initially to more than double the space in the original central library. The comprehensive and detailed program statement written under Lundy's direction was developed into architectural plans for a series of building expansions which could carry the university's library collection program into the next century.

Following Lundy's retirement in 1971, John W. Heussman was appointed director of libraries. Phase 1 of a major expansion of the Love Library had received legislative funding, a development which promised reasonably adequate space for the university's library collections for the short term.

The Divisional Plan at Nebraska

At the University of Nebraska the subject divisional plan grew out of a desire by librarians and teaching faculty to enhance the student's use of the library's books and services. The divisional plan in its initial manifestation was a building plan—the Don L. Love Memorial Library. Under the leadership of the three university librarians in the 1930s, the idea of displaying part of the collections with nearby professional library services resulted in a building plan which would contain "reading rooms for working collections of books in allied fields of knowledge." Similar ideas for academic library service organization were also being developed at the University of Colorado and at Brown University.

Early architectural sketches for a new central library at Nebraska indicated several large reading rooms for the shelving of thousands of subject-related books. The early general building concepts were developed into the final plans for a library building offering four large reading rooms to house on open shelves "working collections of books" in the Humanities, the Social Studies, Education, and Science and Technology. Two additional reading rooms were designated to house general reserve reading and government publications.

Frank Lundy developed and evolved the subject divisional plan from what was originally a building concept at Nebraska to a philosophy of library service based on improving the student's ease of access to library materials and services. The principal tenets of the divisional plan were seen as:

1. All functions of the library, with the exception of technical processes and top administrative positions, are divided into subject areas.

2. Free and open access to all library materials.
3. Librarians serving the public are subject specialists rather than reference librarians.
4. Pedagogically the divisional library is designed to parallel and support the trend in teaching which emphasizes the more independent type of study as contrasted with the lecture and textbook form of teaching.

On the opening day each of the four Love Library reading rooms contained groupings of book collections by broad areas of closely related subject matter and, in addition, a selection of related current periodicals, a core of general and special reference books, pamphlets, and vertical file materials. Library materials of primary interest to the undergraduate student were selected from the general stacks collection. The first few years of operation in the new central library saw changes in the location and in the relationships of collections and management services. After a year or two, it was felt that the students would be better served if the reserved reading was contained within the subject reading rooms rather than in the original centralized reserve room, so the reserve collection was decentralized. It was also found that operating separate circulation desks in each of the reading rooms caused delay in obtaining vital information on loans and was not very efficient in the use of personnel, so the circulation was centralized. The hallmark of the early Lundy years was trial and experimentation to find more effective ways to combine library materials and services for the benefit of students and faculty.

The organization of the staff for service in a subject divisional library needed careful study and delineation. Professional staff was chosen to complement the general tenets or concepts of the divisional plan. The librarians who were to work effectively with students and faculty, it was felt, had to be subject specialists. Library subject specialists were not expected to be masters of subject matter in the way teaching faculty were required to be. Instead, they were to be experts in the bibliography of their subjects and in research methods. Their familiarity with the literature of particular subjects made it possible for them to give the students expert assistance in using the library. These same subject librarians developed easy and useful working relationships with the teaching and research faculty in particular subject areas because of common interests in broad disciplines. Selecting books and other library materials for the collections was to be a joint enterprise for the subject librarians and the faculty, and their common interest in the body of literature and bibliography was of substantial benefit in building the collections.

The divisional plan of organization naturally had implications for the collections and services outside of the central library. The three major libraries, for Law, Agriculture, and Medicine, and the several departmental libraries for the support of the sciences and professional disciplines, were to be administered within the divisional framework. The smaller libraries were administered by the divisional staff in the central library; for example, the library staff in the science departmental libraries reported to the Science and Technology Division headquartered in Love Library. The three large branch libraries were treated as separate subject divisions, and liaison between library units with related interests was carefully worked out.

A major Nebraska innovation in a common academic library practice involved the cataloging of books by subject librarians, referred to as the Dual Assignment. The first logical extension of the divisional concept beyond the direct service to the library users had occurred earlier with book selection. Book selection had traditionally been centered in the acquisition departments of academic libraries. So prevailing was the logic of having subject-oriented librarians responsible for book selection that this dislocation of a "technical process" function to the "public service" librarians caused very little comment. In the early 1950s Nebraska initiated a plan whereby the divisional staff assigned to work directly with students and faculty, and to select library materials, were also given the assignment of cataloging and classifying materials within their subject area. The circumstances of that period influenced the methods adopted. In the general shortage of librarians after World War II there was a particular shortage of good catalog librarians. The quality of individuals attracted to a new divisional library, on the other hand, was high. Nebraska then was still on Dewey classification, which meant that even the catalog copy available from the Library of Congress required extensive modification for local use, and 50% of the books required original cataloging. It appeared obvious that librarians with strong subject interest and expertise would excel at applying classification and subject headings if they were given the right setting. Working under the supervision of a core of senior catalog librarians, individuals from the subject divisions were assigned half-time to prepare catalog records for the books and periodicals they subsequently used in serving the students and faculty. As circumstances changed, and especially when Nebraska adopted Library of Congress classification in 1964 and fully accepted LC copy and classification numbers, the needs for dual assignments changed. Although the dual assignment as a formal part of the organization was dropped in the late 1960s, there are still a few cases where special circumstances produce a need for a dual assignment.

Another departure from the traditional library practice concerned documents or government publications. The most common ways to handle documents in most university libraries had been either to have a closed documents collection where all government publications were administered and housed in a separate area, or conversely to catalog and classify *all* government publications for shelving with the rest of the library's collection. Nebraska had a closed documents system. The basic library functions of selection, acquisition, record keeping, shelving, reference service, and circulation were under the supervision of one librarian in a separate area of the central library. An intensive study of the documents practice at Nebraska led to the realization that the publication programs of governmental agencies had greatly changed in the variety of subject matter following World War II. Concurrently it was found that subject librarians and users alike, especially in the science and technology fields, were not aware of the vast body of valuable material available in government publications. The study developed a broadened interest in all government publications, the kinds of uses to be made of them, the kinds of records needed to service them, and the relationships of documents to other kinds of library materials of similar format. Nebraska adopted a new policy

in 1956 based on neither extreme of the closed collection or the fully cataloged method: "Insofar as practicable, government publications will be handled within the pattern of organization and use established for other library materials." The policy would integrate the technical processes of government publications with other materials to be acquired, and would catalog and classify the most important government publications for intershelving and use with other library materials. The residue, entirely United States government publications, would be shelved in a separate area according to the Superintendent of Documents scheme.

The divisional plan library served the academic community very well at the University of Nebraska through the 1940s and 1950s. By the early 1960s some aspects of the divisional plan were in trouble at Nebraska. The enrollment continued to rise (from 8,700 to 20,000 in a decade) and correspondingly the size of the teaching faculty increased. The explosion of print increased the flow of materials to be processed. The library staff increased much more slowly than was needed to keep pace with the increase in students, faculty, and materials.

About this time the physical aspects of the central library contributed to the difficulties of serving the students, as they had previously. The reading rooms were not large enough or flexible enough to allow growth of the collections and growth in seating, or to permit easy expansion into adjacent areas. By the mid-1960s it became necessary to reduce the number of service points and the hours of professional service. Later, in the interest of concentrating more hours of service at still fewer points, the subject reading rooms were abandoned. The book collections were combined into one sequence to form a College Library Collection, and traditional Reference and Periodical rooms were established. The physical aspects of the divisional plan had disappeared from Love Library.

The organizational aspects of the divisional plan were retained. The subject orientation of the librarians working with students and faculty and working on building the collections remained. The divisional plan has probably left a permanent imprint upon the organization and service patterns of Nebraska.

Branch Libraries

The University of Nebraska–Lincoln Libraries consist of 12 library units, the central library and 11 branch libraries of varying sizes.

The *Undergraduate Library,* opened in 1970, contains 55,000 volumes selected for undergraduate students, with particular emphasis on course-related materials, such as collateral reading and assigned reading. It is located in the dormitory area of the campus.

The *C. Y. Thompson Library,* located on the East Campus in Lincoln, contains collections numbering 128,000 volumes strong in agriculture, home economics, and related sciences. It has, in addition, a working collection of materials in the humanities and social sciences. The library's forerunner, the Agricultural Library, was begun at the turn of the century.

The *Law Library*, begun in 1894, serves as a laboratory for the College of Law students and faculty. Its collection of about 95,000 volumes is primarily concerned with English and American law.

The *Architecture Library* in its present form dates from 1943. It has a collection of about 3,500 volumes and 75 current periodicals to serve students and faculty in architecture and allied fields.

The *Chemistry Library* was begun in 1930 to serve the research activities of chemistry and chemical engineering. Its collection, predominately periodical in nature, contains 20,000 volumes and 250 current periodicals.

The *Dentistry Library* on the East Campus serves students in clinical dentistry and dental hygiene. A small collection of 3,000 volumes and 250 current periodicals is supplemented by the medically related research collections in the C. Y. Thompson Library.

The *Engineering Reading Room* was started in 1971 to aid the engineering faculty and other researchers to keep abreast in their fields of specialization. The collection consists of 500 current periodicals.

The *Life Sciences Library*, located in Bessey Hall, serves botany, microbiology, and zoology. The library and the nucleus of the collection dates from 1895. The size of the collection is approximately 30,000 volumes and 600 current periodicals.

The *Mathematics Library*, begun in 1966, contains mainly research materials in mathematics and mathematical statistics. It has a collection of 5,000 volumes and 190 current periodicals.

The *Morrill Hall Library* contains material in geology and paleontology, and serves the State Museum as well as students and faculty in the subject of geology. The collection has 18,000 volumes, 635 current periodicals, and 45,000 maps.

The *Physics Library*, begun in 1922 as a laboratory adjunct, contains mainly research materials in physics, computer science, and astronomy. Its collection has 7,000 volumes and 250 current periodicals.

Present Organization

The Nebraska Legislature in 1967 passed a bill calling for the merger of the University of Omaha, a municipal university, with the University of Nebraska, subject to approval by the voters of the city of Omaha. The following December the Omaha voters approved the merger by means of a referendum, and in October 1968 the Board of Regents reorganized the university's structure to reflect the merger. A systems administration was established with the chancellor as the chief administrative officer of the university. Three administrative units, headed by three presidents, were created, each president reporting to the chancellor: Lincoln campuses and outstate activities (UN–L); University Medical Center in Omaha (UNMC); and University of Nebraska at Omaha (UNO).

The merger caused a major change in the administrative organization of the university's libraries. Before the merger, the library at the University Medical

Center in Omaha had been an integral part of the university libraries. Now the libraries of each university administrative unit report directly to their own president. After some months following the merger it was apparent that a mechanism was needed to coordinate the goals and missions of the three separate library systems. A Council of Library Directors was set up under the chairmanship of the vice-president for academic affairs. The basic purpose of the council is to design methods and programs for the coordination of resources and services of the libraries of the university. This effort toward self-coordination of the library programs gained in effectiveness as the goals and missions of the three administrative units were further clarified.

The University of Omaha—now the University of Nebraska at Omaha—was principally an undergraduate institution with master's programs in a few fields. Its future development into graduate fields and the coordination with similar programs at the university in Lincoln (UN–L) was an important area requiring decision by the Board of Regents. The library program obviously would be affected by the outcome.

The University Medical Center had expanded rapidly during the 1960s into new medical and nursing fields and into health services to the community. Its library program was expected to support that expansion. In 1971 the medical library moved into a new library structure which would permit adequate future growth of its collections and services. The administrative changes brought about by the merger resulted in substantially increased funding of the Medical Center's library program.

The University of Nebraska–Lincoln Libraries system is a centrally administered one of 12 library units on two campuses. In addition to the main library, there are three major branches serving undergraduates, law, and agriculture-related fields, and eight smaller branches serving mainly the sciences. The technical processes are centralized in the main library. The UN–L libraries serve a student body of 21,500, about 3,500 of them on the graduate level; 42 Ph.D. programs; and a faculty of about 1,500. The collections and related services constitute the state's only general research library. The libraries serve the university in its mission of teaching, research, and service.

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EUGENE M. JOHNSON

NEPAL, LIBRARIES IN

Nepal is a Hindu country situated between two powerful nations of Asia, China in the north and India in the south. It is a mountainous country, generally famous for Mt. Everest, the highest mountain in the world, and has an area of 54,718 square miles, slightly larger than the state of Arkansas. According to the census of 1971, it has a population of 11,555,933, increasing at the rate of 2.7% every year. Only 17% of the total population live in the rural areas, but agriculture is the backbone of Nepal's economy. Geographically, Nepal has four regions: the Terai or tropical, low southern area bordering India; the valleys; the hills under 10,000 feet; and the high Himalayas.

But for administrative purposes, Nepal is divided into 14 zones, containing 75 districts. Nepal has a panchayat system of government under the leadership of H.M. King Birendra Bir Bikram Shah Dev. Under this system there are 3,898 village panchayats, or local government units, and 16 town panchayats. The members are elected by citizens over 21 residing within the unit and these in turn elect a district panchayat which chooses the members of the national, unicameral legislature, the Rastriya Panchayat. The King appoints his prime minister from within this group. His Council of Ministers looks after the administration of the country. However, the constitution says "The executive power of Nepal shall be exercised in accordance with the provisions of the constitution; other laws for the time being enforced by His Majesty directly or through ministers or other officers subordinate to Him."

Although the low rate of literacy (13.9%) shows Nepal's backwardness, yet interest in education has a long history in Nepal, for it is mentioned in ancient stone inscriptions and in early records preserved in monastaries. *Education in Nepal*, a report of the Nepal National Education Planning Commission, published in 1956, and other books on education in Nepal give a detailed history. The ancient inscriptions written about King Mana Deva of the sixth century, King Anshuvarma of the seventh century, and King Jaya Deva of the eighth century clearly indicate that Sanskrit education flourished in Nepal, even before these dates. Some kings, like Jitamitra Malla and Jayaprakash Malla, wrote Sanskrit dramas in the 17th and 18th centuries. Due to the interest the early kings of Nepal had in books and learning, Nepal is believed to have a repository of untold treasures of manuscripts on Tantrism, philosophy, Sanskrit grammar, astrology, rituals, religion, medicine, Vedic literature, etc., well preserved in Baudha Viharas (Buddhist schools), Mathas, Gompas, temples, and Chaityas. Hence, Nepal can be called a country with ancient library traditions.

Yet popular education and libraries could not develop in Nepal, mainly because of the autocratic rule of the Rana prime ministers in Nepal from 1846 to 1951. Education for the general public was prohibited during the Rana rule. The Ranas and their followers, only, could obtain an education. The Ranas used to engage tutors for their children, either Pandits or Europeans or Bengalis from India. Schools established during the time of Prime Ministers Jung Bahadur, Ranodip Singh, Bir Shumshere, Deb Shumshere, and Chandra Shumshere in the late 19th and early 20th centuries to teach elementary reading, writing, and arithmetic were kept under strict supervision and control. Politics, civics, etc. were not allowed to be discussed in class. People were afraid to even mention these subjects. Academic tools like books, magazines, newspapers, radios, etc. were banned for the majority. No education, no information for the public was almost a slogan of the Rana regime. Even to express the need for a library was forbidden and would lead to punishment. In 1929, the great Nepali poet Laxmi Prasad Devakota and some of his friends were sent to jail because of their decision to open a public library in Nepal, the poet states in the visitor's book of the Dhawal (public) library of Palpa district in western Nepal. However they were released after fining them Rs.100 each and making them promise that they would never indulge in any kind of social welfare.

Nevertheless, before the glorious revolution of 1950, some libraries like the Bir library, the Kaiser Library, and the Singh library existed, but these were private libraries mostly owned by the Ranas themselves and not open to the public. Public libraries seem to have come into being in different districts of Nepal as forerunners of the revolution. Progressive-minded people used to get together to discuss plans to rid themselves of the Ranas. They seem to have collected books within the fields of their interest and provided reading facilities to the local people. Public libraries of this description thus came into being: the Dhawal library of Palpa in 1936 (shifted to its own library building in 1947); the Mahavir Library of Butawal, founded in 1947; the Public Vidya Bhawan Library of Dharan, established

in 1947 and now under Town Panchayat administration; the Adarsha Library of Biratnagar, established in 1946; the Pradipta Library of Kathmandu, established in 1946, etc.

After the Revolution of 1950, Nepal became democratic; Nepali people became free. The importance of education for the development of the nation and for the enlightenment of its people was recognized. Many new schools and colleges were opened. Progressive and knowledge-thirsty people also opened many libraries in the hope of giving free access to knowledge. As a result, public libraries came into being in districts, villages, and toles (blocks of streets). Even without financial help, friends of these libraries started a library association and published a library magazine *Nava Nirman* under the editorship of Basu Dev Baidya 'Shashi' in 1955. But none of these hundreds of libraries established then had an opportunity to develop and become well organized, since, naturally, nobody knew the real meaning of library service or how to organize them and administer them efficiently. They had no government support. Indeed, public libraries were hardly mentioned in any government act until the Education Rules of 1970, which merely say that permission to open a library should be sought from the government. Consequently, the libraries named above and the hundreds of public reading rooms established can hardly be called true public libraries from a professional point of view. They lack definite objectives and have only randomly donated collections, located in one or two rooms of a house or in temples or Satahals (places donated for religious purposes). The people working in these libraries may never have heard of modern classifying and cataloging of books. Due to lack of financial support, they have difficulty in keeping open a few hours a day or even a week. Nepal does not have a single modern, public library which could help teachers, students, engineers, doctors, farmers, and other professional people.

However, the Nepal National Education Commission appointed in 1954 does give due importance to library organization and services for the academic institutions it recommended developing. In its report (page 148) the commission recommends "A strong central library should be established as a centre for study and research." It also mentions the need for school and village libraries. Just after this report appeared, an agreement between the government of Nepal and U.S. Agency for International Development (AID) was signed on April 30, 1957 to establish a central library at Kathmandu, the capital of Nepal. With this Central Library, opened under the guidance of Dr. E. W. Erickson on June 1, 1959, library services in the modern sense began in Nepal. The Central Library could only have developed because of the persevering efforts of Mr. John L. Hafenrichter, the U.S. library advisor at U.S. AID, Nepal. After another 6 weeks, the Tribhuvan University Act was passed and the university itself came into being in 1959. This same year, Tribhuvan University Library was established and later the Central Library was handed over to it in accordance with a decision of H.M. Government (H.M.G.) made in 1962. Though with limited means and personnel, this library has been able to propagate ideas of the importance of library services in educational development. As a result, a committee formed in 1967 submitted a report on

library development in Nepal within a month to the National Education Advisory Council of H.M.G. of Nepal. The convener of the committee was Miss Shanti Shrestha (now Mrs. Shanti Mishra), the librarian of Tribhuvan University Library. Although the plan has, unfortunately, not yet been implemented yet it has become a memorable chapter in the history of the library movement in Nepal, for it recognized that a separate committee under the chairmanship of a professional librarian was necessary to plan for library development.

Existing libraries in Nepal can be divided into five categories: (1) government libraries; (2) public libraries; (3) foreign libraries; (4) special libraries; and (5) academic libraries.

Government Libraries

No government library in Nepal attempts to serve the public, but there are several libraries under the administrative control of H.M.G. Among these, three are worth mentioning: Nepal National Archives; Kaiser Library; Nepal National Library. Besides these, there used to be a Central Secretariat Library, now no longer in existence, and small collections of books in every ministry and department, which are not available to the general public. Due to the lack of trained personnel and adequate budget and of a definite plan and policy, all of the government libraries are quite unorganized. None recognizes the need for trained personnel to administer any of them. The administrative staffs change too rapidly to learn good library procedures. So it may take a long time to turn these libraries into modern institutions, equal to the task of developing the country. They lack any uniformity in classification, cataloging, furniture, etc. and are completely without standards. No good library service can be expected from them.

NEPAL NATIONAL ARCHIVES

The Nepal National Archives began in the time of the Malla kings over 2 centuries ago. After the unification of Nepal by King Prithvi Narayan Shah, all the scattered books and manuscripts were put together in Hanuman Dhokha Palace. During the Rana regime, this collection was moved from one place to another and finally, under Prime Minister Bir Shumshere, was deposited under the Tower at Trichandra Campus as the Bir Library. Now it has been renamed the Nepal National Archives and is in its own building in Thapathali. It is under the control of the Archaeology Department of H.M.G. and is the oldest library of Nepal. Of its 27,000 books, 20,000 are manuscripts and of these, 12,000 are on palm leaves. The 14 different scripts are quite unique. Its Skanda Purane Ambika Khande alone is approximately 1,700 years old and not available in any other part of the world. Large collections of books on Hinduism and Buddhism are at least 2,000 years old. Recently under the joint Nepal–German Manuscript Preser-

vation Project, most of the manuscripts have been microfilmed and this project is still continuing.

KAISER LIBRARY

This is the personal library of the late Field Marshall Kaiser Shumshere Jung Bahadur Rana and contained 29,000 volumes. After his death, it was handed over to the Ministry of Education in 1968 and since then has been under the control of the Archaeology Department of that ministry. It was one of the great personal libraries of Asia and was started in 1909. Since 1921 it has occupied the Kaiser Mahal. It has a good collection on Nepal.

THE NEPAL NATIONAL LIBRARY

The library was established in 1955 to conform to the practice of establishing national libraries in other countries of the world. The private collection of the Royal Priest, Pandit Hemraj Pandey, was bought by H.M.G. and renamed the National Library. It is of great importance despite its brief history. It contains about 50,000 books in 11 different languages, such as English, Sanskrit, Nepali, Hindi, Prakrit, Tibetan, Bengali, Russian, Chinese, Tamil, etc., but it is a national library in name only and is not able to function as a modern national library should. Perhaps, it satisfies national pride to be able to say that Nepal possesses a national library.

Public Libraries

We have already named several so-called public libraries. To reiterate, they cannot be termed modern public libraries for the following reasons: (1) Their collections cannot meet the needs of the public, being mostly gifts. Whatever comes in is stored. (2) Library service is not free. (3) They are unable to serve their public. People must hunt until they find what they want, if they can. They are only called public libraries because they are open to all who can read, on the payment of a fee. Among the better-known libraries are:

PRADIPTA LIBRARY, KATHMANDU

This library was started in 1946 in the house of Mr. P. B. Kansakar with the help and support of freedom-loving young Nepalis, united to raise a voice against Rana autocracy. It has about 8,000 books. It lacks its own building and has moved from one rented place to another with the help of the friends of the library. Due to a lack of money, this library is closed at present although it has acquired a plot of land from the Town Panchayat for construction of its own building. The founders

and friends of the library are trying to raise money to reopen it in a rented room until the building can be constructed.

DHAWAL LIBRARY, PALPA

This library was established in 1936 on the ground floor of the founder's house as a reading room known as Pustak Padhane Dalan. In 1947 it moved into its own building, constructed with public help, and became known as the Dhawal Library. It has about 10,000 books, with a separate reading room next to it, and is a living proof of how eager people were for libraries and learning, even without government support.

MAHAVIR LIBRARY, BUTAWAL

The Mahavir Library started in 1947 and is in its own building, although the structure was not constructed especially for it. Butawal is well known for its production of ghee (clarified butter). The merchants who make a profit from ghee contribute to this library regularly and it has been made a compulsory tax inforced not by government but by themselves. The library contains approximately 10,000 volumes.

ADARSHA LIBRARY, BIRATNAGAR, AND
PUBLIC BIDHYA BHAWAN LIBRARY

The Adarsha Library, started with public help in 1946, and Public Bidhya Bhawan Library, established in 1947 at Dharan, are other public libraries which have their own separate buildings. These are examples of the public libraries which may be found in many other parts of Nepal, as well.

Foreign Libraries

Several foreign libraries, functioning somewhat as public libraries, may be found in Kathmandu. The more important of these are the USIS Library, the British Council Library, the Nepal–Russia Friendship Association Libraries, Nepal–China Friendship Association Libraries, and Nepal–India Friendship Association Library. These libraries mainly contain books on their own government policy, descriptions of their country and its institutions and literature by the authors of that country. Their main objective is to create cordial relations between the countries by providing reading matter which will shed a rose-colored light on their native country. But the British Council Library and USIS Library provide books published in their countries in many different fields of knowledge. They are used by teachers, students, and others. These two libraries look like modern libraries with good reading facilities and attractive furniture. Borrowing privileges are

quite liberal. There used to be foreign libraries in different districts of Nepal, but according to a decision made by H.M.G. in 1972, all foreign libraries outside Kathmandu Valley, including the libraries run by the British Council, India, and Russia, were closed.

Special Library

Madan Puraskar Library, started in 1955, has as its main objective to collect all Nepali literature to support the national language. Its 8,000 books in Nepali can be of great help to all scholars doing research in this language or literature.

Academic Libraries

Before 1950, a few schools existed for the benefit of followers of the Ranas, like Durbar High School, the first school in Nepal, established in 1851; and Trichandra College, started in 1918. But with the end of Rana autocracy in 1950 and the dawn of the democratic era, many new academic institutions were opened to give a real education to the public. Many began without government assistance, such was the popular enthusiasm for learning. As a result, Nepal now has 2,332 schools, 82 campuses for higher education and one university. All charge a tuition fee. Although there seem to be so many, the teachers, especially in the lower and secondary schools, are poorly trained. Reading books are so few in these lesser schools that the children form circles around the owner of a book and recite the lesson in unison together. Even the institutions of higher learning depend on a few old books. The teachers spoonfeed the students, giving lectures based on their own schooling, which the students are supposed to memorize and be able to write down at examination time. They lack library facilities. Collections of a few hundred or a few thousand can be found at some of these institutions, but without much organization. They look like secondhand book stores of the poorest type. Trichandra Campus library, established in 1918, has 15,000 volumes. The books are kept in locked book cases. Book budgets at most of the other libraries do not exceed $100 a year. While the library of the Institution of Education of Kirtipur Campus (formerly the College of Education), the Patan Multiple Campus, Padma Kanya Campus, Kathmandu, Mahendra Morang Adarsha Campus of Biratnagar, Prithvi Narayan Campus of Pokhara, the Thakur Ram Campus at Birgunj, etc. all have libraries of a sort, their collections consist of only 5,000 to 15,000 volumes, usually in locked cases, although the libraries at Palpa, Pokhara and Padma Kanya, Kathmandu have open access. The necessary steps to turn these into modern, well-organized institutions have not been taken because of a failure to realize the part libraries should play in achieving the goals and objectives of these campuses. The old concept of librarianship is still dominant. Most of them do not have professional staff. Nobody seems to think about the necessary space to be provided, library

furniture and equipment, library supplies, adequate book funds, or qualified, professional staff. Naturally no adequate budget is set up for them. They are quite unable to provide library service in any real sense.

TRIBHUVAN UNIVERSITY CENTRAL LIBRARY

This library, established as we have said in 1959, originally suffered from the same old conception of inadequate book collection and facilities. Without an adequate budget, the collection of 1,200 books was shelved in stacks made out of bricks and planks of wood in very limited quarters. Unused to any better, it may have seemed quite satisfactory to most Nepalis, but it hardly compared with a university library anywhere else in the world. But a radical change took place in 1963 with the appointment of the present librarian, Mrs. Shanti Mishra, who was sent by the university to the United States to study library science. This year, 1963, is a landmark in the history of library development in Nepal as well as in the growth and organization of Tribhuvan University Library itself. The force, energy, spirit, and enthusiasm with which the librarian and her husband, the assistant librarian, set to work have made this library one of the best in Asia, as stated by the British Book Development Council in 1969, and have provided a model of what efficient and prompt service in a library can be, for the whole of Nepal. Within a few months, it was furnished with standard, steel book racks, reading tables, periodical racks, a circulation desk, display racks, and card catalog cabinets. Local carpenters were trained by the librarians to make library furniture. The new and attractive building, especially designed for it, makes a worthy setting. What a change from the former dismal dark quarters! Various programs, such as talks on library services and on the library and education, displays and exhibits on important occasions, and seminars on subjects of national and international importance were organized to attract people and demonstrate that a well-organized library can play a definite role in the dissemination of knowledge to support the teaching and research activities of the university. As a result, the library was given a larger and larger budget. Starting from its 1,200-book collection in 1959, it now has 76,000 volumes on its shelves. It subscribes to 500 periodicals from many different countries and occupies 17,700 square feet in its own building on the university grounds at Kirtipur. Distinguished visitors often remark that it is the most imposing building on the campus, combining native wooden carvings around its door with attractive furniture and facilities within. As Nepal's only modern, well-organized library, it serves the students, teachers, the community, and all who reside in Nepal. Its books are classified according to the Dewey Decimal Classification and it has a dictionary card catalog with entries set up according to the Anglo-American code. Since 1964, it has been serving as the depository of the United Nations for Nepal. It has also a microform collection and a map collection. Its Nepal collection contains modern documents on Nepal as well as many early works. A reference section with a well-chosen collection of books and tools stands ready to serve students, teachers, and other library users. In 1974 a

true reference service was set up—with orientation programs to acquaint students with the library, its card catalog, periodical indexes, and other reference books, so that they may be able to solve for themselves the problem of finding the information they need—but reference questions were willingly answered, and bibliographies on much-wanted subjects compiled. Hence, this library has had a tremendous success in making people library conscious.

The university library has not neglected the development of Nepal's other libraries, but has been requesting the concerned authorities to give due attention to their organization and development: to increase the number of qualified, professional librarians, to raise the status and salary of the personnel, to pass a book delivery act for libraries, etc. The writers of this article have regularly published articles in local newspapers and magazines on various aspects of library science and services to make the public realize their importance. The library has also organized seminars to give the various campus librarians some preliminary knowledge of how libraries should be organized.

The new National Education Plan, published in 1971, seems to have disregarded all these efforts, since it does not mention libraries or library services in the various institutions and campuses, now made part of the university system. Although it emphasizes the value of individual study and research among all students, it makes no provision for supplying the library services which alone would make this possible. According to the act, the university is now decentralized, with institutions established throughout the country.

The University Library does not know what will be its future. It has lost all its administrative and financial powers, its representation in the University Council, and its committees, which it had before the implementation of the New Education Plan, so that the development of libraries and library services in Nepal seems to be going backward, an unfortunate and unexpected chapter in library development in Nepal. None of the steps the University Library has been advocating to improve the condition of existing so-called libraries have been taken. There is still no government support for public libraries, no recognition of the need for standards in any library or professional staff, no library school in Nepal, and no professional library association. The writers of this article drafted a Delivery of Books and Newspapers Act and sent it to the Ministry of Education in July 1974 to submit to the National Panchayat. They prepared—with the help of the few other professional librarians in Nepal, only 12 in the whole country—*a constitution for a professional librarian's association* and submitted it to the Commission of Bagmati Zone in 1970 but, unfortunately, permission to start has not yet been received.

Since 1952, only 12 people have attended library schools in India or the United States. H. M. Government does not seem to think it necessary to offer scholarships regularly in the library field. Even when an occasional scholarship in library science is offered, capable, dynamic people are unwilling to go because of the low status and poor pay librarians here receive. UNESCO, the Rockefeller Foundation, the ALA, the IFLA, the Carnegie Foundation—none of them seem interested in Nepal's library problems.

A few encouraging signs have occurred recently. There is evidence that the plan for library development in Nepal submitted in 1967 is not a completely dead issue. Some discussion of it is still going on. The librarian of Tribhuvan University Library was nominated to membership in the University Council by the King, himself, acting as Chancellor of the University even though membership of the librarian is no longer automatic. The lack of proper provision for library services in the new education plan of 1971 has received some attention and recommendations of Tribhuvan University Central Library to fit these needs are undergoing scrutiny. High officials in H.M. Government are said to be thinking of reorganizing the government libraries. There are indications that the Act for the Delivery of Books and Newspapers to Libraries may pass soon. The many letters received by Tribhuvan University Central Library from different institutes, campuses, and government libraries asking it to train their staffs indicate that people are at last beginning to appreciate the need for professionally trained personnel in libraries. While the thought that librarians should receive adequate pay and a worthy status has not yet been taken seriously in most quarters, the salary for some campus professional librarians has been made equal to that of lecturers, at the suggestion of Tribhuvan University Central Library. While this is far from true at most campuses, still these few cases are encouraging and happy signs. While UNESCO, the IFLA, and American foundations have paid no attention to library development here in the past, their interest and help would be highly welcome in the future.

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NARAYAN MISHRA
SHANTI MISHRA

NETHERLANDS KONINKLIJKE BIBLIOTHEEK

See *Koninklijke Bibliotheek (Royal Library), The Netherlands*

THE NETHERLANDS, LIBRARIES AND INFORMATION CENTERS IN

Organizations

Different organizations, each with its own history, character, aims, and responsibilities complement each other in watching over the interests of the Dutch library and documentation community in the widest sense of the word. The most important organizations are the following.

RIJKSCOMMISSIE VAN ADVIES INZAKE HET BIBLIOTHEEKWEZEN (STATE ADVISORY COMMITTEE ON LIBRARY AFFAIRS)

There has been a body for more than 50 years which has been responsible for advising the government on all matters concerning the Dutch library system,

whether or not invited to do so. Until recently this was the Rijkscommissie van Advies inzake het Bibliotheekwezen (State Advisory Committee on Library Affairs), which was founded in 1922. It ended in 1975, and its function was taken over by an officially organized Library Council (see next section).

Up until the postwar years, the committee was chiefly concerned with the research libraries and this was reflected in its organization. The libraries of all the universities and technical colleges were automatically members of the State Advisory Committee, of which the librarian of the Royal Library was chairman by virtue of his office. Consequently the committee became the place where the librarians of all the large research libraries could meet and discuss common interests connected with committee business. This rather one-sided state of affairs gradually changed, especially during the 1960s until, in 1967, there was a thorough review of the committee's internal structure and working methods, in which public libraries were given a more clearly defined place.

The year 1967 also saw the publication of a long-term policy program entitled *De wetenschappelijke bibliotheken in Nederland (Research Libraries in the Netherlands)*. Many of the topics put forward in this program are already being studied by various committees or working parties.

One independent committee, appointed by the minister of education, for example, has submitted proposals for the establishment of a copyright deposit to serve as a basis for a national bibliography. Such a plan was published in 1974. [See also under *Koninklijke Bibliotheek (Royal Library), the Netherlands* and the section on "Research Libraries".] Other important topics included the relations between institute libraries and the central university library, and the project for framing a coordinating plan for assembling collections in research libraries.

Other areas currently under review include automation of various library procedures and the associated adaptation of cataloging rules and alphabetization; the use of reproduction techniques and the allied question of copyright; improvement and further development of postal lending; the preservation of manuscript and old books; library building; and library legislation for the research libraries.

One subject which affects both research and public libraries is the provision of scientific publications for students. The advice submitted by the State Advisory Committee on this point has resulted in responsibility for provision being delegated to a large number of public libraries and regional research libraries which now serve the various regions. The related question of library provision for higher education is currently being studied by a separate committee. In the public library sector, emphasis was especially laid on the preliminary stages of drawing up the statutory regulations of public library work.

BIBLIOTHEEKRAAD (LIBRARY COUNCIL)

In 1975, the responsibility for advising the government on all library affairs was delegated to the Library Council, which was set up by the prime minister on October 15, 1975.

The organization and procedure of the council are statutory, and it consists of two departments of 15 members each: one department for research and special libraries, and one department for public libraries. The former department will have to devote itself, in the first instance, to carrying on the work of the State Advisory Committee.

One of the responsibilities of the Department for Public Libraries will be to give advice on a number of matters which are listed in the Public Libraries Act, which also came into force in 1975. In addition, this department will take over work which was carried out by a separate state commission for public libraries until a few years ago; that is, advising on the allocation of state subsidies in special cases.

In contrast to the State Advisory Committee, which consisted of only professional members, one-third of the members of the Library Council are not librarians. In addition, there will be a limit to the number of librarians from the growing number of universities and technical colleges who will be given a seat on the council. The chairman is one of the nonlibrarians, but the librarian of the Royal Library automatically becomes the vice-chairman.

Together with the chairman and vice-chairman of the departments, the chairman and vice-chairman form the Dagelijkse Raad (Executive Council), which is responsible for initiating the activity and executing the decisions of the council and the departments.

There is also a permanent committee in the council for the provision of advice on matters concerning the whole spectrum of library work covering both departments. A salaried secretary is responsible for running the council.

NEDERLANDSE VERENIGING VAN BIBLIOTHECARISSEN (NVB) (NETHERLANDS ASSOCIATION OF LIBRARIANS)

Whereas the State Advisory Committee is a fairly small advisory body consisting of members who are individually appointed by the minister of education, the Nederlandse Vereniging van Bibliothecarissen (NVB) was until recently a professional organization of everyone working in libraries or documentation centers. It afforded an opportunity for colleagues from similar or different libraries to meet, exchange ideas and experiences, discuss technical problems, and protect their common interests.

In this way, since it was founded in 1912, the NVB has reflected the basic unity of trade and profession, the view that all its members, however dissimilar their daily work, contribute to a single social task, in which they rely on each other and come to understand that they are often faced with identical, or at least very similar, technical and organizational problems. The membership of the NVB therefore embraces officials of university and technical college libraries, regional research libraries, libraries for trade and industry, and libraries of ministries, state departments, and private organizations, as well as public library staff, who also have their own trade union, the Centrale Vereniging voor Openbare Bibliotheken

(Central Association for Public Libraries), now known as the Nederlandse Bibliotheek en Lektuur Centrum (NBLC) (Netherlands Center for Public Libraries and Literature, see next section).

However, the combined membership of the NVB and the NBLC presented an increasing number of formal and practical problems for both organizations. For this reason, the aims of the NVB were redefined in 1975, and from this year the union has consisted exclusively of officials from research and special libraries and related institutions. Public library officials stayed in the NBLC.

The NVB and the NBLC cooperate on a "joint" venture in order to preserve a link among all libraries and to promote those matters which are of interest to the entire library world. For this reason the Federatie van Organisaties op het gebied van het Bibliotheek-, Informatie- en Documentatie-bestel (FOBID) (Federation of Associations of Staff Members of Libraries, Information and Documentation Services) was formed, and more will be said about this later.

The NVB, whose name and statutes will be adapted to the new and limited scope of the area of activity in the near future, currently consists of three sections, each working autonomously and with a considerable amount of freedom of action within the total association. There is a section for Special Libraries, which dates from 1941, and a section for Research Libraries, which was formed in 1947. The third section, for Information Officers, came into existence in 1975, and takes the place of the previous Centrum voor Literatuuronderzoekers (Center for Information Officers), which existed outside the context of the association. In some cases the sections have themselves generated working groups from libraries covering a common area. There are, for example, groups for law libraries, agricultural libraries and information centers, and biomedical information centers.

In some parts of the country the NVB has created provincial or regional sections.

The NVB and other organizations are responsible for the contents of the monthly *Open,* the only Dutch journal dedicated to library work, industrial archives, information, and documentation. This responsibility is now taken over by a foundation (see under "FOBID").

NEDERLANDS BIBLIOTHEEK EN LEKTUUR CENTRUM (NBLC) (NETHERLANDS CENTER FOR PUBLIC LIBRARIES AND LITERATURE)

The Central Association for Public Libraries was founded in 1908 with the object of promoting the establishment and maintenance of public libraries, and protecting the interests of personnel in those libraries. One of the founders was Dr. H. E. Greve, who was secretary to the association from the date of its founding to 1951, and was indefatigable in promoting the development of public libraries in the Netherlands and encouraging state interest in the movement. He made a major contribution to the introduction of the State Subsidy Conditions of 1921, which, although amended and added to, applied until July 1975, when a Public Library Act was put into operation. This will provide greater legal security and improve financing.

The Central Association has always championed the interests of the public library with the authorities, particularly the state, and at the same time, actively fostered the development of its sector of the profession through its secretariat and the work of the numerous committees, and, wherever possible, encouraged unity in organization and methods.

As will be explained in greater detail in the section on public libraries, it was characteristic of the development of public libraries in the Netherlands that autonomous Roman Catholic and Protestant libraries were founded as well as the general libraries, with whom they were regarded as being on the same footing by the state.

Although these denominational libraries were also represented in the Central Association, they also had their own administrative organizations whose names and forms varied over the years, but which will be referred to here by the names they had at the end of the 1960s: *Katholiek Bibliotheek en Lektuur Centrum (KBLC)* (Catholic Center for Libraries and Literature) and *Christelijk Lektuur Centrum (CLC)* (Christian Center for Literature).

However, one of the most important postwar developments on this front was the gradual relaxation of this denominational separation. At the local level there was a growing readiness to cooperate and to form a "joint" library, and to combine work which had previously been undertaken separately. It was even more desirable to introduce this unified approach in a national organization of public library work. This was one of the main reasons for the replacement in 1972 of the Central Association for Public Libraries with the Dutch Center for Libraries and Literature (NBLC). The KBLC and the CLC are associate members of the center, and their study and communication centers are integral parts of its office organization.

The NBLC has essentially the same aims as the old Central Association, albeit in the context of modern social development, and has the same two-tier membership —the libraries and library personnel. Both categories are also represented on the board.

In addition, there is a study center for workers in public libraries and personnel throughout the organization. There are departments within the NBLC for specific activities: there is a department of Music Libraries and Record Libraries, a department for children's library work, and a department of library work for the aged, infirm, and handicapped. A number of working groups and committees are responsible for the communication between the NBLC office and library work in practice. Examples of these are the groups for library building, mobile libraries, publicity, school libraries, and information service, etc.

In addition to the NBLC there are some other national organizations which deal with publicity work. Two important institutions are the *Stichting Nederlandse Bibliotheekdienst (NBD)* (Foundation for Dutch Library Services) and the *Stichting Landelijke Bibliotheekcentrale (LBC)* (the National Foundation for Library Centers).

The NBD is represented by bookshops, publishers, and librarians and takes care of the central wholesale buying, and makes books ready for lending for the public libraries.

This institution works in close cooperation with the above mentioned literature information service of the NBLC, which is in charge of information about literature and bibliographical activities (the production of catalog cards) for the available books. The LBC takes care of individual orders of books from public libraries. At the same time the LBC makes supplementary collections available, often for special groups of readers, such as immigrant workers.

The NBLC publishes its own periodical, *Bibliotheek en Samenleving (Library and Society)*.

FEDERATIE VAN ORGANISATIES OP HET GEBIED VAN HET BIBLIOTHEEK-INFORMATIE EN DOCUMENTATIEBESTEL (FOBID) (FEDERATION OF ASSOCIATIONS OF STAFF MEMBERS OF LIBRARIES, INFORMATION AND DOCUMENTATION SERVICES)

In 1975, FOBID came into existence as an amalgamation of the two existing associations, the NVB and the NBLC. FOBID took over those activities which were concerned with both the research and special libraries, and the public libraries. For example, it is responsible for the annual library congress at which librarians from widely differing libraries have been meeting since 1923.

FOBID has also taken over the responsibility for the regional centers from the NVB. There are currently eight centers spread throughout the country which together form an assembly of centers, and this in turn falls under the jurisdiction of the FOBID. In 1971, the NVB had begun an assembly of employers "for the purpose of promoting the common interests of the members." This assembly has also found a place in the FOBID.

From 1916 to 1969 the NVB and the Central Association for Public Libraries jointly produced *Bibliotheekleven (Library Life)*, the only technical library periodical for the Netherlands. In 1969 this was replaced by *Open*, which has a broader base: the other participants being the national organizations of industrial archivists and information officers. In 1975 a separate foundation came into existence for the publication of *Open*, in which the FOBID participates for the Dutch libraries.

The board of the FOBID consists of 10 members, of whom five are chosen by all the participants.

NEDERLANDS ORGAAN VOOR DE BEVORDERING VAN DE INFORMATIEVERZORGING (NOBIN) (NETHERLANDS ORGANIZATION FOR INFORMATION POLICY)

The impetus for the formation of the Nederlands Orgaan voor de bevordering van de Informatieverzorging (NOBIN) was the so-called Weinberg Report (*Science, Government and Information*), published in the United States in 1963. This report excited the interest of a number of librarians and documentalists and, above all, of the association *Nederlands Instituut voor Informatie, Documentatie en Registratuur*

(NIDER) (Netherland Institute for Information. Documentation, and Filing) and its members.

This institution, which was founded in 1921, did a great deal in its 50-year history to promote documentation and information and related subjects. Its work involved investigating problems in the fields of documentation, classification, automation, coordinating documentation in pools, and participating in courses for special librarians, industrial archivists, and information officers.

At the same time NIDER was a service institute which advised on patents and the equipping of industrial archives and documentation services.

It also made an important contribution, through the medium of the Netherlands Classification Committee, to keeping the Universal Decimal Classification up to date. On the international stage NIDER represented the Netherlands in the Fédération Internationale de Documentation (FID).

Toward the end of the 1960s it was generally accepted that this area could no longer be left in private hands and that a national policy for scientific and technical information was required. While the general outlines of the plan were still being filled in, it was decided to make NIDER the nucleus of the new organization. So, in 1971, NIDER passed into history and NOBIN was born.

NOBIN is concerned with investigating existing and new methods in the field of information, advising on those methods, and stimulating the development of certain projects and systems. One of the guiding principles as regards these projects is the application of automation in the field concerned. NOBIN was, and is, responsible for such projects as the development in the Netherlands of the Union Catalog for Cartography and Maps (CCK), the NOCI (Netherlands Organization for Chemical Information) project, an experimental hospital system (ZIS), and the Project Integrated Catalog Automation (PICA). The latter project investigates possible cooperative applications for automated cataloging systems in large research libraries, with particular emphasis on the humanities. It is a joint project involving the Royal Library and the University Libraries of Amsterdam (the Free University only), Groningen, Leyden, Utrecht, and Nijmegen.

It goes without saying that NOBIN is an active contributor to the framing of international information policy. NOBIN participates in a number of international efforts in this field.

Another of its aims is the promotion of effective training in information handling at all levels. Moreover a study has started on the balance between the supply and the needs of information in the Netherlands.

COMMISSIE ALGEMENE VRAAGSTUKKEN UNIVERSITAIR BIBLIOTHEEKWEZEN (CAVUB) (UNIVERSITY LIBRARY GENERAL AFFAIRS COMMITTEE)

At the end of the 1960s, when the University Council found itself becoming more and more involved in the interrelated development plans for the universities

and Hogescholen, it also came to consider the position and role of the libraries. A need was felt for an advisory body whose chief task would be to assess the library and information sector as regards its effectiveness for scientific education and research.

The resulting organization, CAVUB, was set up in 1971. Apart from librarians, the committee consists of library users—scientific personnel and lecturers—as well as administrative officials. Important advisory reports produced by CAVUB and adopted by the University Council concerned student libraries and the training of students in the handling and shaping of scientific information.

CONVENT VAN UNIVERSITEITSBIBLIOTHECARISSEN (ASSEMBLY OF UNIVERSITY LIBRARIANS)

This is a rather more informal consultative body which has been in existence since the early 1960s.

The exchange of ideas in the assembly chiefly covers general matters arising from everyday library practice. The librarians of the Belgian universities of Antwerp and Louvain are also affiliated to this assembly.

VERENIGING VOOR HET GODSDIENSTIG-WETENSCHAPPELIJK BIBLIOTHECARIAAT (VSKB) (ASSOCIATION FOR THE THEOLOGICAL LIBRARIANSHIP)

This association was founded in 1969 as the successor to the *Associatior for Seminary and Monastery Librarians*, which dated from 1947. The original restriction to librarians of Roman Catholic institutions has been abolished in the new association. Today membership is open to any librarian who can align themself with the aims of the association from a Protestant or more general standpoint.

The association publishes its own bulletin.

PERMANENTE COMMISSIE VOOR OVERHEIDSDOCUMENTATIE (PCOD) (PERMANENT COMMITTEE FOR GOVERNMENT DOCUMENTATION)

The members of the Permanente Commissie voor Overheidsdocumentatie (PCOD) are the librarians and the heads of the information departments cf the ministries. The committee meets regularly to discuss matters of coordination among the libraries and information services of the ministries. The main topics are to avoid duplication of tasks and to promote the use of information by the ministries, especially in the sphere of decision making.

Library and Documentation Education in the Netherlands

As in most other countries, a strong wind of change is blowing through the whole Dutch educational system, including professional education. The following

survey of professional education for personnel in libraries and documentation/ information gives some idea of the present situation (in the middle of 1975) with just a few indications of highly probable changes in the near future (during the period 1975 to roughly 1980).

Library and documentation/information education in the Netherlands consists almost entirely of the following three types of courses: a postgraduate course at the University of Amsterdam; undergraduate courses at six Library and Documentation Academies (higher professional education); and various part-time courses of the *Stichting Gemeenschappelijke Opleiding (GO)* (Foundation for Joint Training Courses), which vary from a basic to a postgraduate level.

THE POSTGRADUATE COURSE AT THE MUNICIPAL UNIVERSITY OF AMSTERDAM

Since 1964 this postgraduate course has been a course for librarians in research libraries. It has been reorganized as described below, starting in the academic year 1975/1976.

This course has been included in the department of Book and Library Science in the Faculty of Letters, but it is meant for students in all the faculties and courses of study.

It is a part-time course which takes 2 years. Students who have taken their "kandidaatsexamen" (candidate's examination) in their main subject can take the first year. They spend 1½ days a week on this course; the rest of their time is taken up with study for their master's degree in their main subject (which could be history of art, English, sociology, biology, etc.).

The second part of the course can only be taken when the student has a master's degree in his main subject; i.e., the student may follow the lectures and the practical training of the second year, but he can only take the examinations and hand in the project work after he has a master's degree. As the interval between a bachelor and a master's degree is 2 to 3 years, many students spread the library course over 3 or even 4 years.

The second year of the course also requires 1½ days a week, although this could be more if the practical work consisted of a (6-month, full-time) project. There are quite a few students who do the whole course after completing their master's degree.

The course is aimed at positions in research libraries. Most students who have completed the course then work as subject specialists; others take up more general work in research libraries. As yet, the course diploma is not a strict requirement for these jobs although it is a recommendation.

The course is divided into an A and a B course which follow the same syllabus for the first 10 weeks of the first year to facilitate choosing one of them later on. The A course is concerned with Book and Library Science, the B course with Library and Documentation Science. The main division and proportionate number of lecture hours of both courses (in both years) are given below in order to give some idea of the differences in content.

	Lecture hours	
	A	B
History of books	59	14
Manuscript material in libraries	22	—
History of libraries	22	9
Bibliographic organization	14	24
Organization of knowledge (including cataloging and classification)	65	125
Library management	51	66
	233	238

Within both courses it is possible to specialize to some extent during the second year, especially with regard to the student's main subject.

The student's work is largely assessed in six written or oral examinations as well as by individual assessment of project work in the second year.

In the academic year 1975/76 there were about 60 students in the first year and about 40 in the second year; most of these were in the faculty of letters.

In a few years time the course may be changed to a 1-year full-time course taken after a 4- or 5-year master's degree course in another subject (at the moment this still takes 6 to 7 years), with an alternative part-time course spread over a few years. There is no intention of creating a (bachelor and/or master's) degree course in librarianship or information studies.

HIGHER PROFESSIONAL EDUCATION AT BIBLIOTHEEK EN DOCUMENTATIE ACADEMIES (LIBRARY AND DOCUMENTATION ACADEMIES)

There are six of these academies in the Netherlands, i.e., in Amsterdam (the Frederik Muller Akademie, the oldest one, founded in 1964), The Hague (the P. A. Tiele Academie, founded in 1971), Groningen (founded in 1969), Deventer (founded in 1975), Tilburg (founded in 1968), and Sittard (founded in 1975). These are independent academies. In September 1975 the number of students in all six academies was 1,500. About 75% of this number are female students

All these academies are affiliated with the Foundation for Library and Documentation Academies; all the interested Dutch library and documentation organizations have contributed to the founding and upkeep of this foundation, the main two being the Netherlands Association for Librarians (NVB) and the Netherlands Center for Public Libraries and Literature (NBLC) (see under "Organizations"). The academies themselves are completely state-subsidized.

The most important entrance requirement to these schools is at least a HAVO education (Hoger Algemeen Voortgezet Onderwijs—a 5-year high school secondary course). Approximately 30% of the students have a longer schooling, i.e., VWO (Voorbereidend Wetenschappelijk Onderwijs—a 6-year high school secondary course). (VWO, as the Dutch name implies, is an essential university requirement.)

The complete course at the BDA (the usual abbreviation of Bibliotheek- en Documentatie Academie) lasts 3 years and is full-time. It must be added that in the near future there will be a possibility of part-time study for at least one of the courses (Numbers 1 and 2 together, see below), though these will obviously take a longer period; however, this option will probably only be open to people over 23. The BDA course prepares students to be "methodological specialists" and it consists of two parts. The first part takes 2 years, the second part is the third year when the students can specialize. The first part, and each individual specialization in the second part, consitutes a department in the BDA. The departments are as follows:

1. Higher professional education (for senior library assistants), aimed at all types of libraries. It is possible to specialize to some extent in a particular type of library and/or library function during the second year of these first 2 years. This part of the course ends with a final examination and the diploma is an advantage in applying for senior library assistant functions.

   In the third year there are the following specializations which are also examined at the end:

2. Higher professional education for librarian in a public library
3. Higher professional education for children's librarian
4. Higher professional education for librarian–documentalist
5. Higher professional education for music and record librarian
6. Higher professional education for position in a research library
7. Higher professional education for school librarian

Not all the BDAs offer all the possible specializations (and therefore departments). For example, Department 4 exists only in Amsterdam and The Hague, Department 5 only in Amsterdam, and Department 6 only in The Hague.

There is a separate department in the Frederik Muller Akademie in Amsterdam, a 3-year course of higher professional education for the book trade and the publishing business with its own curriculum.

In September 1975 the number of students in the above departments was, respectively (first and second year students combined):

Department 1:	1,179	Department 5:	15
2:	147	6:	11
3:	64	7:	24
4:	61		

The Department 2 diploma is an official state requirement for the director of a public library and no other diploma is valid.

The subjects and the average number of lectures (of 50 minutes) in Department 1, the course for senior library assistants, is given below in hours per subject per week:

1. Theory of librarianship and documentation; at least ½
2. History, aims, and structure of libraries and documentation; at least 3
3. Knowledge and selection of library materials; at least 1½
4. Organization of knowledge; at least 5
5. Library management; at least 3

   Nos. 1–5 inclusive; at least 15

6. Philosophy and currents of thought; at least ½
7. Knowledge of culture and society; at least 1½
8. Literature; at least 1½
9. Survey of the sciences (including social sciences); at least 1½

Nos. 6–9 inclusive; at least 7

10. Physical training; 2

Nos. 1–10; at least 25, at most 27

At the end of the first year, the students have a 6-week practical training and this is repeated at the beginning of the second year. One of these training periods takes place in a public library, the other in a research or special library.

An attempt is made to give the students as much proficiency as possible by doing practical work at the academy itself, a large proportion of which takes place in the reference library of the academy. This library is well stocked with bibliographies and reference works for this purpose and is separated from the central school library.

The students' work is assessed in examinations (most of which are written; covering, among other subjects, cataloging, classification, and abstracting), individual pieces of work, and written and oral finals.

The aim of the BDA courses is not only to prepare the students for current library practice, but also to give the students an education which makes them sufficiently flexible to keep up with the rapid changes in the techniques of library and documentation science.

PART-TIME COURSES ORGANIZED BY THE STICHTING GEMEENSCHAPPELIJKE OPLEIDING (GO) (FOUNDATION FOR JOINT TRAINING COURSES)

In 1950 the Netherlands Association of Librarians (NVB), the Netherlands Association of Industrial Archivists (NVBA), and the Netherlands Institute for Documentation, Information and Filing (NIDER) founded the *Gemeenschappelijke Opleiding (GO)* as a joint venture. The purpose was and is to organize part-time courses for employers of research and special libraries, industrial archives, and for information officers. The courses were organized by a committee; each type of course is guided by an Advisory Committee and each course is guided by a (part-time) professional tutor. Since 1971 GO is a stichting (a legal foundation, according to the Dutch law on foundations). Participants are NVB and NVBA. The organizing committee is now the board of the foundation. The GO is not state-subsidized. The costs are covered by tuition and examination fees which are often paid for the students by their employers.

The GO offers a number of different part-time courses. The courses are as follows:

The course A1 and A2, a basic course for people working in special libraries (A1—technical. A2—nontechnical). This course is given in The Hague and in Zwolle (East Netherlands) or Eindhoven (South Netherlands); in the academic year 1974/75 there was a total of 120 students taking this course. The curriculum includes, among others, the following important subjects: descriptive cataloging, Universal Decimal Classification, subject headings, documentation.

The A3 course is the basic course for secondary staff in research libraries (including university institution libraries). This course is given in Utrecht (Central Netherlands) and Amsterdam. In the academic year 1974/75 there was a total of 60 students taking this course.

The curriculum includes, among others, the following important subjects: descriptive cataloging, bibliography, history of books.

The MAVO diploma (this is a 4-year high school secondary course) is an essential requirement for admittance to the A courses. The students must have worked for at least a year and a half in a special library or research library before taking the examination. An A course lasts 9 months, with 1 day, or an afternoon and evening per week of lectures, and a substantial amount of homework.

The B course, Industrial and Business Archive Science, is aimed at people working in business archives in industry, trade, government, or related organizations. This course is given in The Hague; in the academic year 1974/75, 30 students were taking this course.

A MAVO diploma and employment in archives are essential requirements for admittance to the course. A B course lasts 12 months with 2 to 4 days of lectures a month and homework.

The C course is a documentation course at graduate level and is aimed at specialized staff (information officers) in business, research institutes or other institutions concerned with supplying specific information about available publications. This course is given in The Hague and sometimes also in Utrecht; in each place, 18 to 20 people are taking the course.

The curriculum includes, among others, the following important subjects: writing surveys, abstracting, classification, techniques of information retrieval, and information management.

A bachelor's degree (kandidaat), or an equivalent diploma, is required for admittance to the course. It is therefore in principle a postgraduate course, and in practice it is taken by many people holding master's degrees. A C course takes 12 months with 3 days of lectures a month. In addition, roughly 600 hours of homework are given (including the compilation of three surveys among other things: part of this homework must be concerned with the student's type of employment, because of its nature). An important part of the final examination is an assignment to make a survey of the literature on a given topic.

The D course, Advanced Library Course, is aimed at those who are responsible for a library (not a public library) or who are employed as members of staff in a special or research library (department). This course is given in The Hague; in the academic year 1975/76 about 20 people were taking the course.

The curriculum includes, among others, the following important subjects: library management, library material, indexing, abstracting, bibliography, data processing (library automation), writing professional articles and internal reports.

The conditions for admission to the course are as follows:

i. at least a HAVO diploma (5 years of high school secondary education)
ii. the GO diploma 1, 2, or 3
iii. at least 5 years of experience in library work
iv. an indication that the student will profit with regard to his present or future employment
v. the student must be at least 25 years old

A D course lasts 10 months with 3–4 days of lectures a month, and considerable homework (mainly preparing individual projects).

There are a few more points to be noted in connection with the GO courses.

At the moment it is the only library and documentation education in the Netherlands which offers courses (the A courses) for people who have only a MAVO diploma. In this way they fill a gap for special and research libraries which is present in the course system subsidized by the government.

Admittedly the courses are fairly short but the available time is wholly devoted to library and documentation science subjects and to a few other subjects which are directly relevant to professional library practice. This is in contrast to the library and documentation academies (BDAs) where students have to devote 30–40% of their time to so-called "general and integrated studies" (see Nos. 5–9 inclusive on page 250), which are indirectly relevant.

The GO diploma's value is also relatively great because at the conclusion of each course students are examined in written and oral examinations, by an independent committee of examiners within the GO foundation. These examinations are very selective.

All the GO lecturers are part-time; a very large proportion of them work in library and documentation practice. However, there are also a number of BDA staff lecturers who also lecture in GO courses (and in many cases they were doing this before they became staff lecturers).

CORRESPONDENCE COURSES

Finally it must be noted that there are a number of correspondence courses. The GO offers a number of these, i.e.

1. Classification, mainly classifying with the aid of the UDC, one oral and 14 written lessons, and about 140 hours of homework.
2. Alphabetical indexing, one oral and five written lessons; about 50 hours of homework.
3. Descriptive cataloging, one oral and 10 written lessons; about 100 hours of homework.

The MAVO diploma (4 years of high school secondary education) is a requirement for these courses.

The Netherlands Center for Public Libraries and Literature (NBLC) is responsible for the content of the correspondence course, "Boek en Bibliotheek" ("Book and Library") which is aimed at nonprofessional staff in public library work.

This course consists of 20 written lessons, two contact meetings, and requires 200 hours of study.

REFRESHER COURSES

At present there are a few opportunities in the Netherlands for refresher courses; these are aimed at people who completed their professional education, either a short or a long time previously, and the courses are designed to put them in touch with new developments.

These courses are available for library automation and computerized information storage and retrieval.

In the future this situation will have to be rectified, and the initiative and execution of this will require the cooperation of professional organizations and educational institutions.

More details about the professional education in the Netherlands can be obtained from

> The secretariat of the Stichting Bibliotheek- en Documentatie Academies (Foundation for Library and Documentation Academies), Paramaribostraat 21, The Hague
>
> The secretariat of the Stichting Gemeenschappelijke Opleiding (Foundation for Joint Training Courses), Laan Copes van Cattenburch 87, The Hague
>
> The secretary of Opleiding tot Wetenschappelijk Bibliothecaris (Postgraduate Course for Scientific Librarianship), Singel 425, Amsterdam
>
> Literature: H. Paul, "Education for Librarianship in the Netherlands," *J. Education Librarianship*, **15**, 75–94 (1974)

Besides the professional education and training for functions in libraries and documentation/information services there is a need for education and training of the user of research libraries and information centers. This is especially true for students at universities.

Nowadays most of the librarians of universities and "hogescholen" organize introductory courses or days for undergraduate students. Most advanced is the Agricultural University at Wageningen, which has a full-time lecturer for the training of students in their third or fourth year of their study in literature search and report writing.

The course consists of 28 lecture hours, including practical training and homework. The course is based on a text book (also published in an English version: D. J. Maltha, *Literature Search and the Written Report*, Pittman, London, 1976) and is ended by a written examination.

On an individual basis the lecturer assists students and postgraduate students in the composition and writing of theses and dissertations for a doctor's degree.

The main subjects of the course are the following:

> The flow of scientific information
> The purposes of literature search

The tools for literature search
The handling of information
The methods for writing literature surveys
The composition and writing of research reports
The flow of scientific information to industry and trade

Research Libraries

The research library in the Netherlands is open to wide categories of people in Dutch society, and can often be called "public" in the original sense of the word. The research library makes its documents freely available; in contrast to the procedures employed by the libraries of research institutes, where the collections are available only to a limited circle, although innovations can also be detected here.

A number of the research libraries have already reached a respectable age: five libraries were founded in the 16th century in the first stages of the Republic of the United Provinces, and the majority have been in operation for at least a century; their joint collections are also substantial and form both qualitatively and quantitively the excellent foundation on which the whole of Dutch library work is based. A conservative estimate produces a total number of about 11 million volumes, including at least 6,000 incunabula.

Many Dutch research libraries exist primarily in relation to some form of academic education and research. Important services are given to other forms of education, notably to para-university institutes, including teacher training colleges by the provincial and municipal research libraries. The clerical libraries of (protestant) theological colleges and (catholic) seminaries and theological colleges are primarily designed to supplement the training of the clergy. Another group of research libraries are the libraries of learned societies and research institutes.

Regional supporting libraries (RSBs) were founded to provide a solution to the problem of the pressure on the large research libraries by a growing number of requests. These sometimes choose an existing research library in their area as a starting point.

Mutual cooperation is particularly characteristic of Dutch research libraries, especially as far as interlibrary lending is concerned. In the field of acquisition the aim is to follow the German plan, the so-called "Sondersammelgebiete," after defining each library's field of acquisition on the basis of existing collections. An important factor is the existence and smooth operation of union catalogs for which the Royal Library in The Hague is particularly responsible (see *Koninklijke Bibliotheek, The Netherlands*).

In this connection it should be noted that since 1970, a number of research libraries cooperate on the problem of the development of a shared computerized cataloging system. A research project is at present in operation with increasing success under the name PICA (Project Integrated Catalogue Automation).

THE ROYAL LIBRARY

See under *Koninklijke Bibliotheek, The Netherlands*.

UNIVERSITY LIBRARIES

Twelve libraries are included in this category. Each of these is linked to an institute of education. Within the Dutch educational system a distinction is made between universities with four to ten different faculties and the so-called "hogescholen," universities with one to three faculties.

The libraries of these "hogescholen" are obviously more specialized and geared to the requirements of the institution. They lack the universal character of the real "university" libraries, which often had centuries to build up their extensive and beautiful collections. These larger collections are to be found in the libraries of the state universities in Leyden, Utrecht, and Groningen, respectively, and in the library of the municipal university of Amsterdam, which also acts as a city library.

It is difficult to ascertain the exact date when the library of Leyden University was started, but we do know that the university was opened in 1575, and that the founder, Prince William I of Orange, donated a copy of the Bible on that occasion. It is also known that the library has had its own independent site since 1587.

It is the oldest university library, and it should also be noted that it is one of the most beautiful, particularly with regard to the value of its collections, which vies with Amsterdam for the size of the total collection.

The library owes its fame to a considerable extent to the fact that it succeeded in acquiring very important collections, particularly in the 16th and 17th centuries, collected by prominent scholars such as Iz. Vossius (1603–1689), Scaliger (1540–1609), and Perizonius (1651–1715), who were primarily concerned with the contents of the documents. In the department of Western manuscripts these acquisitions can be seen in a select collection of at least 7,000 specimens dating from 800 to 1500.

There are many high points such as the Aratea (ninth century), a copy of the late classical codex, the Psalterium of Louis the Holy, Jacob van Maerlant's *Der naturen Bloeme (The Flowers of Nature)*, (14th century, probably made in a Utrecht workshop). The collection of letters from 17th and 18th century scholars, the precursors of our printed learned periodicals, are an excellent added feature of the collection. The Bibliotheca Neerlandica Manuscripta is housed within the department; this was founded by Professor W. de Vreese and comprises documentation about medieval Dutch manuscripts both in the Netherlands and abroad.

The department of Eastern manuscripts is every bit as important and contains at least 9,000 specimens. The name Levinius Warner is inextricably linked with this; he presented his collection of 1,000 manuscripts in 1665. In addition the Orientalists Erpenius (1584–1624) and Golius (1596–1667), who came from Leyden, deserve a mention. These collectors contributed to the present collection of the library.

Another celebrated collection is that of J. T. Bodel Nijenhuis (1797–1872), antiquarian and collector, who bequeathed 40,000 geographical maps, 20,000 topographical prints and drawings, as well as about 100 atlases, to the library.

One of the most important incorporated libraries is the library of the Maatschappij der Nederlandse letteren (Society for Dutch Literature), founded in

1766, which contains 100,000 volumes in print and 2,000 handwritten editions, medieval Dutch and 18th- and 19th-century letters.

In this university library important collections can be found in the field of classical philology, the history of science, and theology. The library has 17 study rooms, of which a number are housed in the faculty libraries, the Central Medical library, and the Gravensteen center for legal studies.

The library of Utrecht University has its origins in the same period. During the Reformation the Town Council of Utrecht decided, in 1584, that the collections of the abbey libraries should not fall into private hands. It was in this way that Utrecht started a city library with a secular collection from the abbeys, including the Carthusian and the Benedictine Abbey of St. Paul. The library was housed in the choir of the Janskerk until the 19th century.

Since 1636, when the University of Utrecht was founded, it has also functioned as the university library.

The connections between the town and the university were broken during the French occupation, and the university library moved to the ballroom and chapel of the Utrecht residence of King Louis Bonaparte; in 1908 the present main building was added.

Though its collection is less extensive than the collection of the university library in Leyden, it is nevertheless a very rich one. Some celebrated sections of it are the Psalterium Trajectense, made in Rheims in about 810 (A.D.), with its realistic illustrations; the beautifully illuminated Bible from Zwolle, a splendid manuscript of St. Augustine from the Bruges school (dating from about 1470), as well as many manuscripts made in workshops in Utrecht.

After the Royal Library, this library possesses also a very large collection of incunabula and early 16th-century prints. Its collection of maps from Akkersdijk and Moll includes a manuscript map of Abel Tasman, the discoverer of "terre incognita australis," which is dated 1644.

The collection at Utrecht is universal, and it is rich in the fields of theology and history, including English history, and possesses a good collection of Celtic works. The Central Old Catholic Library has a rich collection of Jansenist works. The Central German Library of Modern German Writing and Great Literature has important lending collections.

During the 1960s the Library of the Province of Utrecht Society for Arts and Sciences was acquired. The same happened a decade later to the Library of the Historical Society. Recently, four Catholic, clerical libraries with a total collection of about 200,000 volumes were purchased.

There are attractive smaller collections dealing with Indonesia and the Far East, Dutch theater, and Joan of Arc.

The librarian supervises two faculty libraries, those of veterinary science and of theology, as well as the subfaculty library in the new university center De Uithof.

There are some similarities between the original collection of the Utrecht Library and the collection of the library of Groningen University, founded in

1615 (the university was started in 1614). In Groningen too, a start was made with the secular collection of the abbey, which included an important number of manuscripts. The Groningen Library, as well as the university itself, is smaller than its sisters in Leyden and Utrecht. There are about 900 manuscripts, among which the beautifully illustrated work of Jacob van Maerlant, dating from 1339, deserves a mention.

The library has an unusual copy of the Erasmus edition of the New Testament, which used to belong to Martin Luther, and from which one can see, in numerous marginalia, that this church reformer disagreed violently with Erasmus.

The library takes a special interest in the regional history of Groningen. It also has a beautiful collection of works on the subject of Friesian law. In the collections is included the collection of the Society Pro excolendo jure patrio.

The library of the municipal university of Amsterdam is probably the largest in the Netherlands (with about 1.9 million volumes). It was originally founded in 1578 as the city library of Amsterdam, and carries out this function to the present day. Once again the secular abbey collections formed the oldest part of the collection.

Since 1632 the library has also served the Athenaeum illustre, an educational establishment midway between a gymnasium (secondary school where classics— among other subjects—are taught) and a university.

The 1876 Higher Education Act was responsible for the founding of the University of Amsterdam in 1877, and consequently for the university library of Amsterdam.

This library too has a universal collection with many interesting sections. There is a splendid collection of Amsterdam prints, and old land and sea atlases, as well as maps.

The examples of manuscripts include specimens of the literary politician Hooft (1581–1647), the historian G. Vossius (1577–1649), and the lawyer Grotius (1583–1645).

In this library are included the library of de Koninklijke Nederlandse maatschappij tot bevordering der geneeskunst (Royal Dutch Society for the Promotion of Medical Science), het Koninlijk Nederlands aardrijkskundig genootschap (Royal Dutch Geographical Society), the Remonstrant Church, as well as de Vereeniging ter Behartiging van de belangen des Boekhandels (Booksellers' Society). But the most important is the Bibliotheca Rosenthaliana (in the university library itself), which is the most beautiful, if not the largest, collection of Hebrew and Judaic writings in the world. It was offered to the city council in 1880 by the banker Georg Rosenthal, who was looking for a good permanent home for the library of his father, Leser Rosenthal (1794–1868). Since then the collection has continually expanded.

This university library moved to a modern building in 1967. It is a living center of student life in Amsterdam.

In 1880 the Vrije Universiteit (VU) was founded in Amsterdam on Calvinist principles. Its library is now situated in a modern university building in Amsterdam-

Buitenveldert, and the layout is based on the concept of integration. The library has been built "vertically" in the multistory building so that general services, such as lending and the reading room, are on the ground floor, and the books and reading rooms for each faculty or subfaculty are on the appropriate floor.

The library really started to expand after the Second World War. The legacy of Mr. H. Bos Kzn, who was a member of the Board of Directors of the VU for years, forms a beautiful collection of volumes.

The library of the Catholic University of Nijmegen (1923) suffered serious damage in the Second World War. Even the catalog was lost. It has been able to restore the library extremely well. The library is now situated in a modern building which is centrally located in the modern university complex.

The youngest university library is the library of the Erasmus University of Rotterdam (EUR) (1973). The university has four faculties. The library consists mainly of books on the subjects of economics, law, and social sciences, with a clear emphasis on economics. The library will have a national function for this subject.

A characteristic feature of this library is the complete automation of the handling of the lendings, including the lending administration. The system is based on the Randtriever system developed by Remington.

The library of Rotterdam's Leeskabinet has found a place in the library; this library was originally a private organization which built up a beautiful collection of works, especially on historical and literary matters.

The plans for the foundation of a university in Maastricht are being carried out at present, and a medical library is being built up there. The library of the S.J. (Canisianum) has been bought by the university.

The joint collections of the Dutch universities are much greater than is apparent in the central university libraries. An increasing number of scientific institutes have been founded, especially since the Second World War, most of which have their own library. Some of these are small and rather like reference collections, furnished for the use of staff. On the other hand there are some which have grown to an impressive size and have become specialized scientific libraries.

Roughly speaking, it is possible to distinguish two types of administrative policy in these libraries. On the one hand, the centralized ones, i.e., where the university librarian has a say in the financial administration of these institute libraries; these can be found in Leyden, Amsterdam, and above all, in Rotterdam. On the other hand, there is the type where administration is decentralized and the institute libraries have autonomy in buying and administrative policy, and the influence of the central library is therefore disappearing (Utrecht). In practically all cases there is some sort of relation between the institute library and the central library, and the latter always acts as a union catalog for the entire institution.

LIBRARIES OF HOGESCHOLEN

First a mention must be made of the libraries of the Technische Hogeschool in Delft (THD), Eindhoven (THE), and Enchede (THT).

The library of the *Technische Hogeschool in Delft* is the oldest, dating from the last century, when the Polytechnic School was founded in this town in 1842.

The library is very interesting for a number of reasons. It has the largest collection on the subject of technical sciences. There is national agreement that Delft will function as the central store for (older) technical literature.

Its central position also results from the fact that the union catalog for technical literature (CTC) is in this library. This catalog also records the collections of many libraries of the industry. This is very important because it means that it is an important link in the provision of books for Dutch firms.

When Dr. L. J. van der Wolk was director, the library developed into a national research center for library mechanization. The bibliophone in Delft, a self-service system for requesting books, and the plastic spiral chute designed in Delft, for the transport of requested works, became well known. The latter system has also been installed in Nijmegen. The trend for using microfiches as an efficient means of reproduction also originated in Delft.

The European Translation Centre is affiliated with, and situated in, the library in Delft. This is an international organization, which keeps up a central catalog of scientific and technical translations from obsolete languages, among other things.

In the modern library of the *Technische Hogeschool in Eindhoven* (1956), the institute problem has been solved by furnishing each of the departments of the THE, of which there are nine at the moment, with its own library, coordinated by the central library. In this way an internal decentralization has been achieved, while there is still an outward unity.

The library has mechanized transport and has developed an automated administration of serials.

The most recent technical library, the library of the *Technische Hogeschool Twente in Enschede* (1964), has developed extremely well in a short time. The three libraries of the Technische Hogescholen maintain close contact.

The only university library which does not fall under the Ministerie van Onderwijs en Wetenschappen (Ministry of Education and Science) is the library of *de Landbouwhogeschool* (Agricultural University) in Wageningen, which comes under the Ministerie van Landbouw en Visserij (Ministry of Agriculture and Fisheries). The Landbouwhogeschool (1918) grew out of the State School for Agriculture, Horticulture and Forestry, founded in 1876.

Its library covers all subjects of agriculture and allied fields, including, for example, stock breeding, agricultural economics, rural sociology, food science, home economics, town and country planning, and agricultural history. It has the largest agricultural collection in the Netherlands (at least 400,000 volumes). It has an impressive number of periodicals, which must be the second most extensive in the country, having 10,000 titles.

The library maintains close contact with the independent Centrum voor landbouwpublikaties en landbouwdocumentatie [Center for Agricultural Publishing and Documentation (PUDOC)] in Wageningen. PUDOC is a service institute for the agricultural research institutes and the Landbouwhogeschool. It has two main

tasks: publishing the results of agricultural research in the Netherlands and acting as a central documentation and information service. It maintains many international contacts in the fields of agricultural publishing and documentation.

Finally there is the library of the Catholic University for Social Sciences in Tilburg. This is also situated in modern buildings, and its collection primarily consists of books on theoretical and business economy.

PROVINCIAL AND MUNICIPAL LIBRARIES

The provincial libraries of Friesland, in Leeuwarden, and Zeeland, in Middelburg, as well as the municipal libraries of Arnhem, Deventer, and Maastricht, belong to the category of research libraries. Other municipal libraries, in Haarlem (1596) and in Rotterdam (1604), were of independent origin but have changed their character as a result of an amalgamation with their respective local public libraries. Their original character is still apparent in their collections of incunabula and manuscripts. The municipal library at Rotterdam has a good collection of works by and about the Dutch humanist Desiderius Erasmus (1469-1536), who was born in Rotterdam.

The provincial library in Leeuwarden, founded in 1852, partly owes its founding to the closing of the Rijksathenaeum (state grammar school) of Franeker in 1843, which was a university before the French Revolution. The collection of the Franeker university, which consists of 11,000 volumes, was put at the disposal of the provincial library by the state. The idea behind the foundation of the library was to create a center in the Friesian capital for "the general promotion of good taste, culture and learning," and there was a desire for a stronghold where the practice of the Friesian language, literature, and history could be furthered; after all, the Netherlands does have more than one language.

The collection, which has about 250,000 volumes, is largely made up of works in the field of humanities. There is extensive documentation on the subjects of Friesian language, literature, history, etc. Since 1967 the library has had its own building, furnished in an efficient and modern way, with an auditorium that seats 250 people, which is worthy of note.

The new building made it possible to house a second provincial library here, i.e., the Buma library. This was bequeathed to the province of Friesland in 1876 by Dr. L. A. Buma from Makkum (Friesland), and has 35,000 volumes in its beautiful collection of works dealing with Greek and Roman antiquity. The testator left instructions that the library should always carry his name, and should be housed in Leeuwarden; this has now been carried out in an extremely satisfactory and efficient way.

The provincial library of Zeeland was founded a little later, in 1859, from almost the same motive: "an accessible library for the practice and promotion of knowledge." This rather ambitious aim was understandable for such a geographically eccentrically placed province, which was quite isolated at that time from the rest of the Netherlands, but is was a difficult aim for the librarians to achieve.

The collection in Middelburg also tends to deal with the humanities, and

attention is also paid to books and periodicals from Flanders (in Belgium), which is a cultural area bordering on Zeeland.

The library has to make do with loan collection for the sciences, which it administers for the provincial departments of scientific societies (medicine and pharmacy).

The Second World War was a catastrophe for the library. On May 17, 1940, the library building went up in flames and about 80% of its collection was damaged in the fire. Incunabula, early 16th-century prints and valuable atlases, which were stored in bomb shelters, partly escaped destruction.

An impressive amount of restoration was carried out in the postwar period. The library has collections from the Reformed Church in Middelburg, as well as of the Zeeuwsch Genootschap der Wetenschappen (Scientific Society of Zeeland). There is an interesting collection of children's books from the end of the 19th century, which was bequeathed to the library. The library is also collecting so-called "zeelandica," which includes not only printed works, but also other documents such as postcards, drawings, and photographs concerned with Zeeland.

The librarian in Zeeland is also the director of the Provincial Library Center, which deals with the subject of public library work. An important step has been taken on the road to the development of a new form of cooperation between research and public libraries with this personal union. Middelburg also has connections with the technical library in Vlissingen (Flushing).

The City or Athenaeum Library in Deventer is the oldest research library in the Netherlands. Its foundation was as long ago as 1560, when the Hapsburg court had plans to found a second university in the Netherlands, in Deventer, in addition to the University of Louvain (which is now in Belgium), and this was the initial stimulus for a library in Deventer.

It became prosperous after an Athenaeum illustre was founded in this town on the IJssel in 1630, and the Deventer theologian Jacob Revius (1586–1658), who also became well known as a man of letters, supervised the rapid expansion of its collection.

The library shared, with Arnhem, the collection of the university library of Harderwijk, where Linnaeus had worked, and which was dissolved in 1820.

The Deventer Athenaeum came to an end in 1878, after which time the library was kept only as a municipal library, although its name has remained a link with the past.

The library has a beautiful collection of manuscripts and incunabula; it concerns itself with collecting Deventer prints. The library plays an important part in the provision of literature, especially in a regional sense, for students in higher education.

A similar function is carried out by the library of the city of Maastricht, which is linked to the city archives of Maastricht, and which will undergo significant expansion in the near future. The plans for expanding the library to a regional supporting library (RSB) in a new building, which will also house the Maastricht public library, are in the final stages before the work can be carried out.

The library was founded in 1663 "for the glory of the city." During the French

occupation it was almost destroyed, but in the 19th and 20th centuries it developed into an important regional library which pays particular attention to "Limburgensia." In addition to 75 incunabula, Maastricht has about 500 manuscripts.

LIBRARIES OF CHURCH INSTITUTES

Although the great majority of the Protestant clergy have been trained in the theological faculties of the universities since the Reformation, a number of Protestant church societies have started to set up their own training colleges with their own libraries, especially since the 19th century. The libraries of these theological colleges are relatively small and their collections are limited to books which are considered to be relevant to the training of the clergy. We mention here the library of the Reformed Churches in The Netherlands (1854), the Free Reformed Churches (1944)—both situated in Kampen—and that of the Christian Reformed Churches (1894) situated in Apeldoorn. A number of church societies of protestant stamp have rehoused their libraries in the university libraries (e.g., in Utrecht and Amsterdam).

Also the Portuguese–Israeli seminary "Ets Haim" in Amsterdam has its own library.

Until recently, the various orders and congregations were responsible for the training of the Catholic clergy. They have developed their own libraries. The collections of these seminary libraries, added to those of the abbey libraries, are estimated at about 2.5 million volumes. Some of the latter date back to the Middle Ages, such as the Premonstratarian Abbey in Berne te Heeswijk, founded in 1134. After the Second World War, the Catholic Church decided, for various reasons, to concentrate the theological training in Catholic theological colleges.

These were founded in Amsterdam, Heerlen, Tilburg, and Utrecht. The result was concentration of libraries in which, in a number of cases, collections were sold to existing, or in statu nascendi, libraries. In 1947 the Vereniging van Seminarie en kloosterbibliothecarissen (Association of Theological Librarians) was founded, which later changed its name when the situation changed, to Vereniging voor het theologisch bibliothecariaat (Society for Theological Libraries).

The society has published a bibliographical bulletin since 1959: Scripta recenter edita. In addition it publishes the Bibliographia ad usum seminariorum (Annotated Basic Bibliography).

LIBRARIES OF LEARNED SOCIETIES AND SCIENTIFIC INSTITUTES

First of all we must mention the library of the Koninklijke Nederlandse Akademie van Wetenschappen (Royal Dutch Academy of Sciences), which is housed in the famous Trippenhuis in Amsterdam.

The library was founded in 1808 as a part of the Koninklijk Instituut van Wetenschappen, Letterkunde en Schone Kunsten (Royal Institute of Science, Literature and Fine Arts), which in turn was founded by King Louis Bonaparte,

brother of the French Emperor, and this was the predecessor of the present academy, which was founded in 1855.

The library, which made a definite start in 1811 in its present home, is organized in a unique manner, for important parts of its collection are in different places.

As a result of a meager budget, the library had few chances of developing into a fully fledged research library, especially as far as buying books was concerned. For this reason, important documents were loaned to other libraries at various times, so that they could complete their collections in a beneficial way. For example, the works of Eastern manuscripts in the academy collection have been in the university library of Leyden since 1855, and the West European Manuscripts, including magnificent examples of illuminated art (Van Maerlant, Heinrich van Aken, etc.), as well as the incunabula and early 16th-century prints, have been on loan to the Royal Library since 1937.

The library itself has some beautiful complete collections on the subject of the 19th-century men of letters Bilderdijk and Van Lennep, which were bequeathed to the academy.

Nevertheless the academy library is important to Dutch science. Its significance lies in its large and varied collection of periodicals. It has an exchange system with many foreign learned societies and in this way has material at its disposal which is not easy to come by anywhere else. The collection of periodicals on the physical sciences and medicine is especially striking. This collection includes numerous publications in non-Western languages, especially in Russian. The library also collects congress reports and accounts of scientific expeditions.

Since it made an agreement with the foundation Excerpta Medica in 1946, the academy library has access to all the periodicals (at least 2,000) from which the abstracts are made for *Excerpta Medica*, a series of abstract journals devoted solely to medical articles.

Originally the copies of the periodicals were received after the reference work had been done, and in some cases (too many) pages were missing. This shortcoming has now been completely rectified as the library has all the published volumes in the form of microfiches made in advance. It is possible to obtain copies from these, among other things. The library is equipped in a modern way and has, as might be expected, good reproduction facilities.

The fact that some libraries can fulfill a clearly complementary function is illustrated by the library of the Van Teyler Foundation in Haarlem. It possesses the library left by Pieter Teyler van de Hulst in 1778, which has been carefully extended since that time, although practically nothing has been bought in the last 50 years. The "museum" has a collection of about 100,000 volumes. The attractive Teyler Museum also has a painting and numismatic collection, as well as collections of physics and geological instruments.

Two learned societies have been incorporated into the Teyler Foundation; viz., the Teyler Theological Society for the promotion of the Christian religion, and Teyler's second society for the promotion of physics, poetry, history, drawing, and

numismatics (the hobbies of the founder, Teyler). These societies award prizes and publish dissertations. The foundation also has connections with the Hollandsche Maatschappij der Wetenschappen (Holland's Society of Sciences), founded in 1752, and also situated in Haarlem, which publishes its own periodicals and other works (the edition of the complete works of Christiaan Huygens is particularly well known).

In this way the library has a lot of material for exchange, and has connections with many societies. Teyler obtains about 90% of the current periodicals (at least 1,000) through an exchange system. Much of this collection is concerned with the natural sciences, and in the last few years, the emphasis has been on botanical and zoological literature. In addition there are works on geology, paleontology, and chemistry.

The library's policy is directed at collecting those periodicals which cannot be obtained elsewhere in the Netherlands. In this way it makes an important contribution to the provision of scientific literature, even though it has relatively limited means.

A special place is taken up by the library of *het International Instituut voor Sociale Geschiedenis* (International Institute for Social History) in Amsterdam. The institute was founded in 1935 as an independent foundation, at the instigation of the Amsterdam Professor of Economic History, Mr. N. W. Posthumus. It collects printed works and manuscripts on the subject of social history, particularly the labor movement, and it has a collection of books and brochures, numbering about 360,000 items in its library, which is the largest of its kind in the Western hemisphere. Some of the many important works include the library (40,000 volumes) of Bakunin's biographer, Max Nettlau, and a lot of other material on the subject of anarchy; a collection of material on the Paris Commune (1871); and the documents of the First Internationale of 1864. There are beautiful collections of Russian Revolutionary periodicals from the 19th and early 20th centuries, as well as revolutionary pieces of writing from Germany, dating from before the 1848 Revolution (Vormärz collection).

In addition the institute houses a number of important archives including those of the Sozialdemokratische Partei Deutschlands (acquired in 1938) with extensive correspondence between Marx and Engels, and letters to these leading figures from other socialists. The letters of Robert Owen, as well as the archives of Sylvia Pankhurst and the Socialist League, form part of an important collection of English documents.

The institute publishes its own magazine (*International Review of Social History*) and also publishes in book form correspondence, biographies (e.g., of Moses Hess), and documents (e.g., the Trotsky papers). The library is open to the public and its catalogs are published in book form (12 volumes plus a supplement).

Although it does not quite fit into this category, we should like to mention the Library of the Peace Palace in The Hague (i.e., the permanent court of justice), which resulted from the peace conferences in The Hague, and is concerned with the principles of law, rather than those of science.

It was founded in 1913, financed by the Carnegie Endowment for International Peace, and to this very day comes under the Dutch Carnegie Foundation. The library of the Peace Palace still serves the International Court of justice as well as the Academie de Droit Internationale, which organizes seminars and courses in its own building on the site of the Peace Palace. (It should be noted that the International Court, a branch of the United Nations, has its own library of 50,000 volumes and cooperates with the library of the Peace Palace, on the basis of a modus vivendi.)

The collection of the library of the Peace Palace consists of about 380,000 volumes and concentrates on international law, international organizations, and diplomatic history, aiming at completeness. The library also has important selective collections of the national law of every country, and collects documents about the peace movement. It has a beautiful collection of Grotiana, works by, and about, the Dutch lawyer Grotius (1583–1645), who can be considered to be one of the important originators of modern law. The library collection has been taken up in the union catalogs of the Royal Library and is open to everyone.

De Centrale boekerij van het Koninklijk Institut voor de Tropen (Central Library of the Royal Tropical Institute) in Amsterdam is almost better known abroad than in the Netherlands. It was originally founded as a private organization in 1910.

Most Dutch people know the institute as the "Tropenmuseum," which used to be the colonial museum, with its collections about the (former) Dutch colonies.

Since 1951, when the institute took its present form, the field of operations has considerably widened. Four tasks can be distinguished in this: research, education, development projects, and instruction about the tropics in general (no longer just Indonesia, Surinam, and the Dutch Antilles). The Central Library tries to do this too. It serves the 400 or so staff of the institute, as well as the visitors. It has a beautiful collection of periodicals, some of which were obtained through a good exchange system. The library has its own map room; the collection of maps, including those in books and periodicals, is being made available through a special catalog.

The documentation and information department of the institute publishes *Tropical Abstracts*, dedicated to the literature on developing countries.

Special Libraries

In the Netherlands special libraries are a fairly recent phenomenon. They have their origins in the world of trade and industry, to which libraries of government departments and private organizations were soon added. The special libraries were growing in size and significance toward the end of the 1930s, but they really started to flourish after the Second World War.

The special librarians, together with the information officers and the industrial archivists are the promotors of modern information systems in the Netherlands.

Nowadays the distinction between special and research libraries has become less relevant. They have an increasing number of common problems. It really would not be surprising if in the Netherlands the distinction disappeared completely in the near future. There is already a tendency to strive for the unification of the whole library system in the country, in which different sorts of libraries will be combined, and will form together a large national network of information, which, in its turn, will be part of international networks. Library committees and the PICA project (see under "NOBIN") constitute the first step in this direction.

The map of special libraries in the Netherlands offers a varied picture of the nature of the collections, the size—which can vary from 2,000 to 80,000—its accessibility, the clarity of the collections, the contents, and the age. An investigation showed that special libraries in the Netherlands consist of almost 10% of real business libraries, 35% of goverment libraries—of which about 60% are connected to university institutes—and 45% are libraries of private institutes, including societies.

SELECTION OF IMPORTANT SPECIAL LIBRARIES IN THE NETHERLANDS

Industrial libraries:

Unilever, Rotterdam, which has a separate collection at Unilever Research, Vlaardingen and Duiven: advances in an integrated automation of documentation and library administration (Integrated Library Administration and Cataloging System); own mechanized information system.

Shell Internationale Petroleum Maatschappij B.V., The Hague: 80,000 books, 1,200 periodicals, 1,000,000 patent specifications, and 10,000 manufacturers' catalogs.

Koninklijk Nederlands Shell Laboratorium, Amsterdam.

AKZO Research and Engineering B.V., Arnhem: 50,000 patent specifications.

AKZO Zout Chemie Nederland B.V., Hengelo: automatic system for microfiche retrieval in operation.

Chevron Central Laboratories, Rotterdam.

Philips' Gloeilampenfabrieken, Eindhoven: not open to the general public; subsidiary libraries in Drachten, Hilversum, Weesp, The Hague, and Apeldoorn.

Scholten-Honig Research B.V., Foxhol.

Bronswerk B.V., Amsterdam.

Hoogovens IJmuiden B.V., IJmuiden: 15,000 books, 5,000 technical reports, and 1,300 periodicals.

F.D.O. Engineering Consultants, Amsterdam.

Verenigde Machinefabrieken N.V., Amsterdam.

Koninklijke Nederlandsche Gist- en Spiritusfabriek N.V., Delft.

Van Doorne's Bedrijfswagenfabriek DAF B.V., Eindhoven: 14,000 books.

Hazemeyer B.V., Hengelo.

Heemaf B.V., Hengelo.

Hollands Signaalapparaten B.V., Hengelo.

Koninklijke Machinefabrieken Stork B.V., Hengelo.

Leijempf B.V., Leeuwarden.

Smit Slikkerveer B.V., Ridderkerk.

CINDU B.V., Uithoorn.

IBM Nederland N.V., Uithoorn.

Koninklijke Fabrieken Diepenbrock & Reigers B.V., Ulft.

Unie van Kunstmestfabrieken B.V., Utrecht.

Océ-Nederland B.V., Venlo.

Van Gelder Papier B.V., Beverwijk.

Fokker-VFW B.V., Bedrijf Drechtsteden, Papendrecht.

Naarden International Holland B.V., Naarden-Bussum.

Libraries in the mining industry:

DSM, Central Library, Geleen: 60,000 books and 2,000 periodicals, mainly on chemical subjects; collection of publications from the U.S. Bureau of Mines; large collection of Dutch patent specifications.

Nederlandse Gasunie N.V., Groningen: 11,000 books, 1,500 technical reports, and 600 periodicals; a special collection of 4,000 manufacturers' catalogs.

Libraries in the sectors of communications and telecommunications:

Nederlandse Spoorwegen, Utrecht: 70,000 books, 1,000 periodicals, documentation system; a historic collection of old annual reports on early rail- and tramways; surveys of the publications are published; international cooperation with the Bureau de Documentation de l'Union des Chemins de Fer.

Staatsbedrijf der Posterijen, Telegrafie en Telefonie (PTT), The Hague: 65,000 books, brochures, etc.; 1,000 periodicals; and 21,000 patent specifications. An extensive documentation and surveys of periodicals which are generally available, as well as a central catalog of related libraries.

KLM Information and Documentation Department, and Schiphol Airport, Amsterdam: 37,000 books, 1,150 periodicals, and 180,000 manufacturers' catalogs. This collection is only open to borrowers under exceptional circumstances, though loans can be made to libraries.

Libraries in the insurance sector:

Levensverzekeringsmaatschappij 'Utrecht' B.V., Utrecht: an important and famous collection for a long time.

Ennia, The Hague.

Government—Libraries of ministries:

Economische Voorlichtingsdienst (Economic Information Service) (Ministry of Economic Affairs), The Hague: founded in 1907 as a ministry library and still functioning as such for the Ministry of Economic Affairs but open to the public; 80,000 books, 8,000 periodicals, and a card file of 1,500,000 cards; central economic library for the business world and for economists; publishes *Economic Titles*.

Ministerie van Sociale Zaken (Ministry of Social Affairs), The Hague: 35,000 books, 1,300 periodicals, and a card file of 165,000 cards; documentation system.

Ministerie van Landbouw en Visserij (Ministry of Agriculture and Fisheries), The Hague: 90,000 books and 1,000 periodicals; information desk.

Ministerie van Onderwijs en Wetenschappen (Ministry of Education and Science), The Hague: 40,000 books, 1,000 periodicals, and a card file with 200,000 cards with references to organization, law, societies, etc. in the sector of education and science, as well as bibliographical publications.

Ministerie van Binnenlandse Zaken (Ministry of Home Affairs), The Hague: 20,000 books.

Ministerie van Buitenlandse Zaken (Ministry of Foreign Affairs), The Hague: 40,000 books.

Ministerie van Financiën (Ministry of Finance), The Hague: 40,000 books.

Ministerie van Justitie (Ministry of Justice), The Hague: 80,000 books.

Ministerie von Verkeer en Waterstaat (Ministry of Transport and Public Works), The Hague: 100,000 books, 700 periodicals, and a card file with 400,000 cards.

Ministerie van Volkshuisvesting en Ruimtelijke Ordening (Ministry of Housing and Physical Planning), The Hague: 20,000 books and a documentation section.

Ministerie van Defensie (Ministry of Defense), The Hague: 5,000 books, and in addition has access to a special documentation and information center: *Technisch Documentatie en Informatie Centrum voor de Krijgsmacht (TDCK)*.

Ministerie van Volksgezondheid en Milieuhygiëne (Ministry of Public Health and Environmental Hygiene), Leidschendam: 80,000 books.

Ministerie van Cultuur, Recreatie en Maatschappelijk Werk (Ministry of Cultural Affairs, Recreation and Social Welfare), Rijswijk: 25,000 books, reports, and 1,200 periodicals; it publishes a monthly paper, *CRM-documentatie*, and also has a card file of 225,000 cards.

At a central level there is a very important collection at the

Centraal Bureau voor de Statistiek (CBS) (Central Bureau of Statistics), Voorburg; dating from 1899 with a collection of 102,000 books and 1,400 periodicals; practically all official statistics from abroad and those of large international organizations are present.

In addition, a mention should be made of the library of

Tweede Kamer der Staten-Generaal (Second Chamber of the Parliament), The Hague, which has 114,000 books.

More information on special libraries and documentation centers is published in:

Bibliotheek- en documentatiegids voor Nederland, Suriname en de Nederlandse Antillen, 3rd ed., The Hague, 1971 *(Guide to Libraries and Documentation Centers in the Netherlands, Surinam and the Antilles*, new edition in preparation).

Libraries and Documentation Centers in the Netherlands, 2nd ed., The Hague, 1967 (new edition in press).

Wegwijzer Maatschappijwetenschappelijke Bibliotheken en Documentatie-instellingen, Amsterdam, 1971 *(Guide to Libraries and Documentation Services in the Social Sciences)*.

Public Libraries

HISTORY

It took much longer for the first public libraries to be founded in Holland than it did abroad. Only from 1890 did the real "public library philosophy" start to be developed: The public library should be open to every institution, and should be maintained by the state. In 1892 and 1898 this aim was more or less realized with the founding of the first public libraries in Utrecht and Dordrecht, although they were not supported by the state. In 1906 the Netherlands had only five public libraries.

Fairly soon after the founding of the Central Association for Public Libraries in 1908 (see the section: "Organizations," under *Nederlands Bibliotheek en Lektuur Centrum*), small subsidies were allocated by both the state and town councils.

When public libraries were finally set up on a firmer basis, it was possible to start expanding the work. Gradually branches, children's libraries, and music libraries were founded. For the first time provision of reading material in county libraries became a reality; in towns, libraries sent deposit libraries to outlying areas. Various libraries united in "county associations of public libraries" (especially for these sorts of services) in order to obtain a subsidy from the county for county library work. The state, too, granted a subsidy of a sum equal to the sum allocated by the county.

In addition to these county associations, there were also the so-called "deposit libraries" of an association which was concerned with work in small libraries not subsidized by the state. These deposit libraries made up collections to supplement a number of small nonstate-subsidized libraries, particularly county libraries.

In addition to the expansion of the number of libraries, there were also changes in the content of library work. The function of the lending library became increasingly important, so that the function of the reading and study room gradually took second place. It was easy to see that books for study were considered more important than recreational reading. This is one of the reasons why small non-state-subsidized libraries were able to continue for a long time, for they aimed at the public, which wanted simple recreational reading.

In 1921 a new settlement dealing with the allocation of subsidies was passed, and was in force until recently. It soon became obvious that the government had misjudged the financial consequences of the settlement, so that almost at the same time that it came into operation, there were cuts in the subsidies. Only in 1928 did more opportunities arise for expanding the work. However, the economic crisis in the 1930s and the ensuing Second World War resulted in the work almost coming to a halt once again. Only after 1948 were all the cuts lifted, and the building up and expansion of public library work could begin again.

Public library philosophy had not penetrated into the small communities in the country because of the cuts in the subsidy, so that small libraries not subsidized by the state could consolidate their position there, and as a result this even led to the work there being subsidized.

With time the contrasts disappeared between work in small, non-state-subsidized and denominational libraries on the one hand and general library work on the other. This was partly a result of the ever-decreasing division of social and cultural life in the Netherlands into opposing factions. One of the things that this led to was a decrease in the number of denominational libraries, and in 1972 there was an amalgamation of the central association with four denominational library organizations to form the present Nederlands Bibliotheek en Lektuur Centrum (NBLC) (Dutch Center for Public Libraries and Literature), so that an increasingly effective policy could be carried out (see under "Organizations").

The changes in education, the ever-increasing public interest in world affairs, permanent education, the increase in leisure time, and the increasingly meaningful concept of democracy: these are some of the things which determine the function of public library work today. An even greater need for legislation to replace the state subsidy settlement of 1921 arose in order to satisfy an increasing demand. After a struggle lasting many years, this act finally passed in 1975.

We can see the present organization and structure of the public library system in the correct perspective only by looking at it from an historical point of view.

INDEPENDENT PUBLIC LIBRARIES AND COUNTY LIBRARIES

An important starting point in the organization of public library work is that libraries should be as widespread as possible. Two sorts of library are directly concerned with this. First, 105 independent public libraries with branches and mobile libraries (operating in towns with a population of more than 30,000 inhabitants). Second, 15 county libraries with 187 affiliated libraries as well as branches and mobile libraries. The county libraries are concerned with the provision of books for towns of less than 30,000 inhabitants. For this purpose an agreement of service is signed with the local public libraries. This service usually takes the form of:

1. Coordination of the building up of collections and their maintenance. The county libraries supply the books to the affiliated libraries "ready for lending out," accompanied by cataloging material.
2. Carrying out financial and library administration in the widest sense of the word.
3. Maintaining special departments like a school library service, old-age pensioner library service, record libraries, etc.
4. Staffing: because almost all administration is centralized, the staff appointed to deal with the local library from the county library can concentrate almost entirely on serving the public.

The centralization of different activities does not mean that the county library controls the policy of affiliated local libraries. Each library has independent authority so that the final responsibility for the library rests with the administration of that institution.

Mobile libraries provide a solution for the provision of books for very small villages (generally of less than 5,000 inhabitants) and in towns where there are no permanent library facilities.

REGIONAL SUPPORTING LIBRARIES AND INTERLIBRARY LENDING

Obviously it is impossible to provide all libraries with a collection of books which completely satisfies the public demand. The overall demand is too varied and specialized for this and the amount of literature too great. Effective cooperation in interlibrary lending is essential to meet the public demand. Until recently the demand for specialized literature could be met fairly easily from the Royal Library and the research libraries; however, at the moment there are so many people belonging to these institutions themselves that it is no longer acceptable to lend a great number of publications to public libraries. In addition, the number of orders for books has considerably increased, particularly from nonuniversity students (e.g., for advanced professional training).

In 1969 the state opened 13 regional supporting libraries in order to meet the demands of this large number of people. These are not separate libraries but are existing libraries allocated with an extra function (usually large public libraries or combined research public libraries). Their function is as follows:

1. Building up and care of collections of scientific works of reference, monographs, bibliographies, and scientific journals.
2. Making an inventory of special collections of books in the region.
3. Supplying bibliographical information.
4. Cooperating in interlibrary lending. This cooperation often consists of lending books which have been ordered, or of passing on the order to large research libraries, the Royal Library, or specialized libraries.

The libraries allocated with this regional supporting function are situated in Amsterdam, Rotterdam, The Hague, Haarlem, Utrecht, Arnhem, Groningen, Leeuwarden, Deventer, Middelburg, Maastricht, Tilburg, and Eindhoven.

The factors which determine the reading pattern of the public are of great importance for the function of the public library. The nature of these factors varies, but some important issues which determine the aims of public library work in the Netherlands are the following:

PERMANENT EDUCATION

One of the many tasks of people and institutions concerned with providing information is to explain society and to point the way through its maze of rules and norms. The public library plays an important part in the provision of information on the topics of today. The influence of the mass media, other than the printed word, is becoming increasingly important. But often we cannot form opinions about events because the information which comes across the mass media is not

full enough. It is essential to accompany it with supplementary information and this should be available in public libraries, among other places.

Another aspect of permanent education is the need for continuity in schooling. Nowadays education no longer ends at the completion of a course or study. Retraining, development, and education are essential in order to remain interested and professionally up-to-date, and for this one must have the necessary help and materials at hand. There is an increasing need for good retraining and refresher courses nowadays, at a time of ever-greater interprofessional mobility.

CHANGES IN EDUCATION

The structure and content of education in the Netherlands has been so thoroughly altered in the last few years that the adaptation of the public library services to the educational system is of primary concern. There is a far greater emphasis than before on pupils working independently, either individually or in groups. This was a result of the new Education Act passed a few years ago and the consequent changes in teaching methods. The pupils are encouraged to look up and use information necessary for projects and participation in group projects.

Another aspect of the renewals in education is concerned with the way things are taught. Different subjects are increasingly interrelated and schoolwork can be seen to be more relevant to present society. The necessary information about current affairs cannot be found in ordinary text books, so that this is particularly important when pupils work by themselves.

It is obvious that traditional teaching methods and resources are not enough. Apart from changing the methods, quantities of varied materials will be necessary, e.g., informative literature (books, journals, works of reference, etc.), and material on current affairs (newspaper clippings, articles in magazines, brochures, stencils), narrative literature (particularly useful in reading and language teaching), audiovisual materials (filmstrips, slides, tapes, films, records, etc.). There will be an increasing need for every school to have its own resources center as well as increasing use made of the public library.

The Increase in Leisure Time

Increasing leisure time and increasingly pressure-filled working conditions have clearly led to a big demand for recreational literature, even though the number of alternative recreational facilities has also risen considerably. It is clear that traditional methods used in public libraries until recently are no longer adequate, so that other, more far-reaching methods of serving the public must be carefully sought.

BUILDING UP COLLECTIONS, INFORMATION, AND DOCUMENTATION

The basis of a well-stocked library is a balanced collection (of tapes, records, films, and slides as well as books) which should give easy access to information and

should be well documented; a large part of this collection should be available for lending.

A very specifically Dutch problem in building up a collection is the small area where the language is spoken. Because of the small number of books to appear in Dutch originally, the large libraries, especially, but increasingly the small as well, have to fall back on foreign literature. Important though it is to buy audio-visual materials, the greater part of the budget for buying materials is spent on books.

As important as the buying policy is the disposal policy, which leaves its mark on the collection. A committee of the state for public library norms has fixed a disposal percentage of 15% in view of the aims for an up-to-date stock and the high rate of wear and tear on the books. This means that the librarian must have a thorough knowledge of titles.

It is not enough to point out books available or to refer to a specific book in the catalog if the informative function of the library is to be performed well. Far more relevant and topical information can be obtained if books are indexed under chapter headings, just like articles in journals, reviews, brochures, and publications by publishers who are not officially recognized. At this juncture it must be pointed out that the NBLC looks after documentation of articles in journals so that it is possible for every library to have about a hundred indexed periodicals. The NBLC also issues an information sheet pointing out editions which do not appear regularly, e.g., from publishers who are not officially recognized.

A good example of a documentation center which functions effectively is the Aktueel Dokumentatie- en Informatie-centrum (Adic) (Contemporary Documentation and Information Center) of the Amsterdam public library.

WORK IN CHILDREN'S LIBRARIES

The aims of children's libraries are:

1. Bringing children into contact with good children's books in order to stimulate their critical assessment, fantasy, and both passive and active control of language.
2. Familiarizing children with using the library.
3. Supplying children, parents, teachers, and youth workers with information about books.

Particularly well-known are the story-telling hours and the subsequent activities to promote creativity (drawing or acting out a story, building small sketches around a specific theme), to give an opportunity for doing homework or group projects as well as helping with these, possibly in cooperation with the teacher and/or parents. It is important to establish contact with youth organizations, local organizations, and above all with schools, in order to bring children into contact with libraries. Periodic class visits have been very popular for a long time.

SCHOOL LIBRARY WORK

Contacts between schools and libraries are not limited to class visits to the library. There is an increasing need for school libraries because of changes in teaching methods.

In many districts there is cooperation among the school library services, the school advisory services, and the schools themselves. Often this has led to an amalgamation of these services to help schools furnish school libraries or documentation centers in a responsible way. The reviews of the NBLC play an important part in this; these reviews evaluate books which are being considered as additions to school libraries.

Although the various school library services have been functioning for only a short while, the pooling of activities has proved to be a good idea and has already helped many schools to organize as good a library as possible.

SERVICES FOR THE DISABLED, INVALIDS, OLD-AGE PENSIONERS, THE FORCES, AND PRISONERS

Although this group of people seems rather an odd combination at first glance, they have one thing in common; because of the situation they are in they cannot make use of public libraries. It is for this reason that the library goes to the people, as much as possible. In many cases the public libraries place a small deposit library in the institutions, where it remains; or the institution is visited by a mobile library. Often books are taken to the homes of people living alone who cannot get out, frequently with the aid of volunteers. Libraries also have contact with libraries for the blind which lend "talking books" (read out loud on tapes) as well as books in braille. In order to give everyone equal educational opportunities, an attempt is made to make the collections as varied as possible.

There are in the Dutch public libraries also numerous other services, such as record libraries, music libraries, and art libraries, but these differ only in the materials they use.

THE LIBRARY ACT AND THE RELATION OF THE PUBLIC LIBRARY TO THE GOVERNMENT

The Library Act was passed early in 1975, after a painfully slow wait of 10 years. It lays down guide lines for expenditure and the general organization of public library work. The act will come into complete operation after 8 years of planning. The main points of this act are the following:

A plan must be drawn up in every town for its public library provisions. These plans are passed on to the provinces, which draw up their own plan from all the town plans. A national plan is drawn up by the minister concerned based on these county plans and in consultation with the advisory library council. The plans deal with the maintenance of library facilities and with formulating new aims. Through-

out the probationary period there are ample opportunities for petitions of appeal and for amendments. Plans are drawn up for 3-year periods at a time. On the strength of the general motions passed by the board of directors, decisions are made about the size and content of collections, the location, the hours of opening, the subscription fees (up to 18 years of age it is free), cooperation within the library and with other libraries, the involvement of the reader with what is going on in the library, and staffing matters.

State remuneration of costs will cover 100% of staffing expenditure and 20% of all other expenditures, once the law is completely in force. The remaining 80% of the other expenditures will have to be subsidized by the councils and the county, for town public libraries and county libraries, respectively. The state does not reimburse the cost of library provisions in villages with less than 5,000 inhabitants and reimburses the costs of towns with 5,000 to 30,000 inhabitants only if the local public library has an agreement to cooperate with the county library. State inspectors see that the act is enforced. In addition to controlling things, they also work in an advisory capacity to promote public library work.

Information Services

The principles, content, and background of the term "information" have been discussed in the Netherlands for many years and even now a strict description of this term does not exist in this country. In general, however, professionals do agree that the term information covers more than information from "documents" such as scientific articles, books, reports, and microfiches. For information from documents exclusively the Dutch term is "documentaire informatie" (documentary information). In this section "information" will be limited to this "documentary information" only.

To understand the information activities and policy in the Netherlands it is necessary to emphasize some characteristic features of the country as such. The Netherlands is a very densely populated country and the living standard is rather high. Industrialization was later than in other European countries but the evolution was fast. Nowadays the Netherlands is highly industrialized.

Dutch agriculture has its own character. On one hand, food supply for the dense population is necessary; on the other hand, the Netherlands has a large international export of refined agricultural products (cheese, seed potatoes, vegetables, bulbs, ornamental plants, flowers, etc.).

Trade and transport too are characteristic, due to the geographical situation: a country between industrialized countries at the estuary of the river Rhine and at the shore of the North Sea. Rotterdam is the biggest harbor of the world and the connections with the hinterland by rail, road, and air are good. In short: typical for Dutch society is the interest for international relations in the broadest sense of the word.

The Netherlands is a small country with restricted possibilities and, therefore, the

country is dependent in many respects on good international cooperation. An autarchic policy is impossible. Dutchmen are individualistic, averse to centralization, but easily prepared for national and international deliberations on coordination of activities. This background is the basis for the information activities in the Netherlands.

The Dutch information services reflect the international interest of the country. All these services (with a small exception such as the documentation on Dutch jurisprudence) are based on the documentation of the *international* literature and not the national literature. There is a preference for the literature in English, German, and French (in this order), and of course also for the literature in Dutch. In general Dutch researchers are able to read these languages without much trouble. The interest for literature in other languages is growing although these languages are less accessible for Dutch researchers.

The organization of one, big, centralized information service is not in the nature of the Dutch. On the contrary, many specialized services are created. Only some of them—such as *Economische Voorlichtingsdienst (EVD)*, The Hague (Economic Information Service), *Sociaal-wetenschappelijk Informatie- en Documentatie Centrum*, Amsterdam (Sociological Information and Documentation Center), and *Centrum voor Landbouwpublikaties en Landbouwdocumentatie (PUDOC)*, Wageningen (Center for Agricultural Publishing and Documentation)—have more or less a central function.

Generally speaking, the relations among these specialized services, including the information services of industrial enterprises, are very good—one of the advantages of a small country. The contacts and relations have a personal nature and are less formalized. Colleagues meet each other many times a year in the work of committees or working groups, or still more informally.

After the establishment of NOBIN (see under "Organizations"), several projects on automation of information were started and the discussions on these projects stimulate now the planning of networks. Decisions have not yet been taken, with the exception of some incidental cases.

A combination of some big firms, technical universities, and the *Nederlandse Organisatie voor Chemische Informatie (NOCI)* (Netherlands Organization for Chemical Information) has founded the *Nederlandse Informatie Combinatie (NIC)* (Netherlands Information Combination), a cooperation of users of computerized information.

PRODUCTION OF (DOCUMENTARY) INFORMATION

Scientific publishing is well developed in the Netherlands. Now all scientific publishers have international lists and in this way the Dutch publishers play an important part in the international flow of information by publishing primary scientific journals, books, proceedings of congresses, etc.

The production of secondary or bibliographical publications (abstract journals, bibliographies, etc.), however, is small. *Excerpta Medica* (Amsterdam) is the only well-known international documentation service, producing among others, ab-

stract journals, magnetic tapes, and proceedings. Some other, much smaller, international documentation services are *Economic Titles* [Economic Information Service (EVD), The Hague] and *Tropical Abstracts* [Royal Institute for the Tropics (KIT), Amsterdam].

USE OF (DOCUMENTARY) INFORMATION

In contrast to the *production* of international bibliographical publications, the *use* of these types of information sources is large in the Netherlands. There are indications that the number of subscriptions to international abstract journals, bibliographies, and other information tools (such as magnetic tapes) in the Netherlands is relatively higher than in other developed countries. The reasons are: the decentralization of information services, the interest in the international scientific and technical literature, and the influences of education, giving a training in the use of a broad scale of international bibliographical tools. Moreover the Dutch have for a long time had great interest in international cooperation in the domain of documentation and information.

The Dutchman Dr. Frits Donker Duyvis (1894–1961) was the promoter of the first *international* organization for documentation, the *Fédération Internationale de Documentation (FID)*. The secretariat of the FID is still in The Hague. He was also the man who created, as early as 1921, the first *national* organization: the association *Nederlands Instituut voor Documentatie en Registratuur*, later on *Nederlands Instituut voor Informatie, Documentatie en Registratuur (NIDER)*, The Hague (Netherlands Organization for Documentation, Information and Filing) (see under "Organizations").

It is well known that Donker Duyvis devoted all his energies to the development of the UDC and to the international standardization in the field of documentation. One can say that Donker Duyvis created a "school," for still a great number of Dutch specialists assist on national and international bases in the development of the UDC. There is also great interest in standardization: Many Dutch specialists are active members of different committees of ISO and UNISIST.

As users of several international information systems, Dutch representatives urge repeatedly that compatibility of the computerized systems is essential. This compatibility has a high priority in the Dutch policy.

It will be clear that the Dutch information specialists are interested especially in applications of information systems. Less interest is shown in more fundamental problems and research in the area of information science. All Dutch projects of the moment can be arranged under the caption "development projects."

DUTCH CONTRIBUTIONS TO INTERNATIONAL INPUT

Another international aspect is the Dutch contribution to computerized international information systems. In general the national input is defined as the total of scientific publications that is *published* in the country. We have already mentioned that many international scientific journals are published in the Nether-

lands. The consequence of this fact is that the Dutch part in the total input of such systems is much higher than the total of the publications of Dutch scientists in Dutch periodicals. The Dutch input in the International Nuclear Information System (INIS) of Vienna, for example, is 5,000 abstracts yearly, and with this number the Netherlands ranks third on the list of contributing countries, although Dutch nuclear research is not very highly developed in comparison with the large countries.

The Netherlands contributes to the input of the following computerized international systems:

International Nuclear Information System (INIS)
International Food Information Service (IFIS)
Système de Documentation et d'Information Métallurgique (SDIM)
World Agricultural Information Service (AGRIS)
Agricultural Research Projects (AGREP)

International deliberations have started on data processing of geological data, gene banks, and environmental hygiene.

INFORMATION CENTERS

In consequence of the decentralized character of the information services in the Netherlands it is impossible to list these services here. Particulars on special services can be obtained from NOBIN, Burgemeester van Karnebeeklaan 19, The Hague, or from the guides already mentioned (see the "Special Libraries" section).

Only a few notes on those information centers which are financed or subsidized by the Dutch government are given here.

Economische Voorlichtingsdienst (EVD), The Hague (Economic Information Service): Mutual and written information on economic and sociologic subjects on behalf of trade and industry; card file available of 1,500,000 cards; SDI services. Publishers of the international abstract journal *Economic Titles* (in English).

Wetenschappelijk en Technisch Documentatie- en Informatie Centrum voor de Krijgsmacht (TDCK), The Hague (Scientific and Technical Documentation and Information Center for the Army): Large collection of reports. A large part of the collection is declassified and can be used by trade and industry. Information in the form of references. abstracts, bibliographical lists, and surveys.

Octrooiraad, The Hague (Patent Office): Large collection of Dutch and international patents. Information service is provided by *Afdeling Documentatie van de Centrale Organisatie TNO*, Delft (Documentation Department of the Central Organization for Applied Research).

Centrum voor Landbouwpublikaties en Landbouwdocumentatie (PUDOC), Wageningen (Center for Agricultural Publishing and Documentation): Central information service for agriculture and allied fields. Publishes, among others, a weekly abstract journal *Landbouwdocumentatie* (in Dutch) for the extension service and a quarterly national bibliography of agricultural science, *Pudoc Bulletin* (in English). Information service for government, education, extension, research, and the trade. Information is given in the form of references, SDI, bibliographical lists, and surveys. Some surveys are published.

Sociaal-wetenschappelijk Informatie- en Documentatie Centrum, Amsterdam (Center for Sociological Information and Documentation): Central information service for social sciences. Publishes *Register van lopend onderzoek in de sociale wetenschappen*, Amsterdam (Register on Current Research in the Social Sciences).

Koninklijk Instituut voor de Tropen (KIT), Amsterdam (Royal Tropical Institute): Central documentation and information service on all aspects of tropical and subtropical areas. Special information and advisory services on and for developing countries. International cooperation with FAO. Publishes a monthly abstract journal, *Tropical Abstracts* (in English).

European Translations Center, Delft: European organization with central documentation service on translations from remote languages. An important part of the funds is paid by the Dutch Government.

Many *ministries* have information services which are combined with their libraries. These have already been mentioned under the section *Special Libraries*, with the exception of:

Rijksvoorlichtingsdienst, The Hague (State Information Service): General information on topics and facts about the Netherlands. Press-clipping service. Publishes press releases, popular brochures, and pamphlets on the Netherlands.

USE OF COMPUTER-BASED INFORMATION SYSTEMS IN THE NETHERLANDS

Besides a few large industrial companies purchasing specific magnetic tapes themselves and processing them under their own control, there are in the Netherlands a few organizations which try to further the use of computer-based information services by offering users the opportunity of subscribing to certain services. These provide both current awareness services (SDI), by means of literature profiles, and retrospective searches. Such organizations process tapes under their own control and/or in cooperation with institutes and companies abroad. In this way more than 35 computer-based information systems are available for the user.

The organizations mentioned above are the following:

Afdeling Documentatie van de Centrale Organisatie TNO, P. O. Box 36, Delft (Documentation Department of the Central Organization for Applied Research).

Nederlandse Organisatie voor Chemische Informatie (NOCI), P. O. Box 1766, The Hague (Netherlands Organization for Chemical Information).

Nederlandse Informatie Combinatie (NIC), same address (Netherlands Information Combination).

Centrum voor Landbouwpublikaties en Landbouwdocumentatie (PUDOC), P. O. Box 4, Wageningen (Center for Agricultural Publishing and Documentation).

Excerpta Medica, P. O. Box 211, Amsterdam.

Afdeling Biomedische Informatie, Universiteitsbibliotheek Utrecht, Biltstraat 172, Utrecht (Department for Biomedical Information of the University Library Utrecht).

More detailed information can be obtained from these addresses.

DOCUMENTATION POOLS IN THE NETHERLANDS

A typical Dutch phenomenon is the development of documentation pools and documentation and information services on a cooperative basis. As with many systems of cooperation, the documentation pools, too, when comparing them, vary on a number of scores. But in general the following description can be given.

A documentation pool is set up to be able to handle and process a wider field of literature in a shorter period of time with less individual effort on the part of pool members. Usually, a pool first takes stock of the fields in which its members are interested and with these data a list is prepared which specifies the subjects. Simultaneously, or afterward, an inventory is compiled of all periodicals (journals, reviews, magazines, etc.) available to the pool members. The next step is to select from this complete list the periodicals that are worth processing for the pool.

The production of this procedure is usually a list of 100 to 200 periodicals. Each pool member is then allocated a part of this aggregate for further action. Allocations are, of course, attuned to what is already available to a particular member.

Articles are reviewed in the light of a member's own interest, but also with a view to the significance subjects have for the partners. Indicative abstracts are made and sent to a central place where they are multiplied. It is obvious that each member handles only a certain part of the aggregate, but in return receives data from all the selected periodicals. Pool members are always:

> Branches of trade and industry
> Institutions and organizations (TNO—Netherlands Organization for Applied Scientific Research, for example)
> Government bodies

Some of the pools do not have standing rules (just certain arrangements which are embodied in minutes, etc.) but others are governed by such rules. The frequency of the publication of literature surveys or production of memoslips ranges from every 2 months (an exception) to twice a month. As a rule this frequency is once a month.

The costs the various members have to pay also vary, but the differences are comparatively small. The general assumption is that most pool members have someone on their staff who handles their own documentation and will, therefore, also be able to do the pool work.

Mostly—dependent on the subject—it is worthwhile to join forces as soon as there are some 10 to 20 parties with a common interest in a specific technical field. The groups can be complemented by a number of subscribers. The number of subscriptions will vary from case to case. Duplication of work is an exception, because a pool is not set up if an objective can also be attained in another way. NOBIN supplies secretariat services and allied activities during the pool's initial stage.

There are now documentation pools on the following subjects: nuclear techniques, metal working, material handling, industrial management, administrative

automation, transport, personnel management, wood, building industry, land vehicle engineering, aeronautical engineering, recreation, soil, water, and air pollution, desalination of seawater and brackish water, social welfare and mental health, public water supply, and town and country planning.

<div align="right">D. J. MALTHA</div>

NETWORKS, COGNITIVE*

Those who find beauty in a spider's web may find it also in a cognitive network: a web of ideas. This is a model of knowledge. Processes in or on the network enlarge it by attaching new ideas at points where they fit. Other processes respond to a question by following threads to the answer; cognitive networks support theories of information retrieval. In robotics, environmental stimulation reaches the network at certain points and the threads lead to places where signals for mechanical response are emitted.

A cognitive network can be realized in a computer. Behind its smooth cover, the computer is a web of wires and transistors; the web could be built on the plan of a cognitive network, but at present it is not. When a cognitive network goes into a general purpose computer, it enters as data and program, making no visible alteration of the hardware. As yet we do not know how to build a computer that can revise its own hardware, and the computer builder is reluctant to solder together a network to represent a fixed body of knowledge; hence for the present we have only software networks, with some but not all of the advantages imaginable for hardware networks.

Psychological theory suggests that a cognitive network is realized in the human brain. Under a microscope the brain is a network of cell bodies linked by their axons and dendrites. Perhaps genetic directions and experiential influences make the cells establish synaptic linkages much like those we now draw. Perhaps the level of analysis of contemporary cognitive networks corresponds closely to physiology. We do not know.

Information processing always combines storage with calculation. Network storage tends to obviate calculation; the elementary process is a stroll through the web. In the limit, the only calculation is to decide at each junction which thread to follow next. Like Theseus in the Labyrinth, the internal process knows only where it is. A hybrid system adds an external processor which, like Daedalus the

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architect, can see the network in broad perspective. The external processor can take one portion of the network as a pattern and match it against other portions.

A system with Daedalus's capacity has no need in principle for Theseus, nor even for the network. A processor that can manipulate specific facts and general principles, recognizing the identity of two facts or the applicability to a specific fact of the pattern in a general principle, can deduce any conclusion that a cognitive network can reach.

The network process may, however, be faster. The comparison of two facts, or of a fact and a principle, is not as fast as following a thread from one bead to the next. Without a network, the processor has to search a file for the facts and principles it needs; the network preconnects some pairs for immediate recovery. To calculate from question to answer, a processor generally has to construct a series of inferential steps; at each step alternative inferences are possible, and after several steps, many different series. A serial processor has to examine first one alternative and then another. Cognitive network theory shows how to build a machine that can follow these sequences simultaneously.

Is the cognitive network successor to the library? If so it must evolve through many stages: A management tool—a personnel file or budget planner. A reference tool—an encyclopedia of crystallography or medicine. A theoretical tool—a common blackboard on which the members of an invisible college can doodle interactively. But first it is a conceptual experiment: What are the forms and processes of knowledge that enable us to recognize, to generalize, to plan, and to evaluate?

Definition

A cognitive system consists of a network and a set of processes. The network stores information; the processes add to it, select from it, and make inferences.

NETWORKS

The network contains nodes and links. A node is a point or place; it can be represented by a storage register in a computer, or by a dot or small circle in a diagram. A link is a pair of nodes. In a computer it is represented by storing the address of one member of the pair in the register that represents the other member; in a diagram, a link is a line connecting the two nodes.

Example 1. Each node represents a city. Each link stands for a highway connecting two cities. The network is a map.

Example 2. Each node represents a person. A link signifies that one person is the child of another. The network is a collection of genealogies.

The nodes and links of a cognitive network are of various types; the type is indicated by a label attached to each node or link. The grammar of a network is a set of conditions on association of link types and node types. Types are also used in defining processes.

Example 3. Each node represents a person, but there are two types: male and female. Each link signifies that one person is the child of another. The grammar permits that at most two parents, one male and one female, be supplied for each person (parent is not a new type of link; it is the inverse of the child link).

A cognitive system can be connected with its environment linguistically and behaviorally. Nodes can have names; when a cognitive system is stored in a computer as an information retrieval system, these names serve for input and output. Nodes can have external definitions; when a cognitive system is used in robotics, or as a theory of human psychology, these definitions are built into the sensory and motoric components.

Example 4. A robot is equipped with feature detectors. Each feature is connected with a node in a cognitive network, which contains links to combine features into patterns. Each pattern node is connected with an external name. When a group of features is presented, the robot reports the name of a pattern.

PROCESSES

In an active network, each node is a processor. Every node of a type has the same program. A link communicates signals from node to node. An interesting theory of active networks allows only simple programs and signals. A program is a short list of states; a state specifies what to do when a certain signal arrives on a certain type of link; what to do is transmit a signal and change to a new state. Each signal is one of a few alternatives.

An external process can set initial conditions: the initial state of each type of node; which types of links will transmit; and the initial states of a few nodes specified individually. The external process can also set terminal conditions for a process: a change of state in any node of a certain type, for example.

Example 5. Find a common ancestor for John Doe and Mary Smith. Use the network of Example 3. Links transmit signals only in the child-to-parent sense. When a node receives a signal, it transmits one. When a node receives two signals, concurrently or successively, it enters a special state; the process terminates when any node reaches this state. Start with signals to the John Doe and Mary Smith nodes.

An internal process is global in that its specification uses only node and link types; the indication of individual nodes supplies parameters to the process.

In a passive network, nodes and links are data for an external processor which stores pointers and moves them through the network. An external processor can point to two subnetworks simultaneously and compare them, node for node and link for link.

In a control network, an external processor is associated with each node. Individual processors can have storage and programs; control passes from one to another along the links of the network.

An external process is global if it uses only node and link types; it is local if it uses pointers to individual nodes as control elements.

A network is specialized if its node and link types allow global formulation of a

narrow class of problems; maps and genealogies are specialized networks. A network is generalized if its node and link types permit global formulation of the processes of a theory of inference.

The design of a generalized network for science is of great theoretical importance. In psychology the problem seems to be the design of a mixed network having global processes for the general inferences of rational thought and for the special processes of an organism with human sensorimotor capacities in our universe.

Information Structure

Cognitive systems are inherently limited in material resources; brains and computers do not provide infinite capacity for storage or computation. A system that stores relatively few facts and operates with only the most general rules of inference can take indefinitely long to calculate the valid consequence needed to answer a question or control an action. A system that stores all the valid consequences of even a few axioms is not possible, since all interesting systems have infinitely many consequences. The cognitive network is a compromise; it stores facts in overlapping, compressed, and abbreviated form, and provides many specialized rules of inference.

Overlap, compression, and abbreviation are processes that must operate in the network regardless of the kind of information to be stored: they correspond to nothing in the universe outside the network. They require link types for their definition. These link types and processes constitute information structures.

Other link types, most or all node types, and possibly some processes are defined by a theory of the universe. They constitute substantive structures which could subsist without the support of information structures in a system of infinite capacity.

PARADIGMATIC SYSTEMS

Knowledge is redundant; a single fact may be true of many things. Paradigmatic structure and the rule of inheritance conserve storage space. Connect two nodes by a link of the variety (VAR) type; say the direct sense of the link is from node A to node B. By inheritance, any fact true of B is true also of A. With many nodes thus linked, what is true of any node is the collection of facts to be discovered by starting from it and following VAR links as far as possible.

Example 6. Anthropological research shows that many cultures recognize several varieties of *plant,* such as *tree, grass, shrub,* and *vine.* At the next level, a culture may identify a hundred or more varieties of *tree.* Again, if *oak* is a variety of *tree,* then *white oak* is a variety of *oak.* If "plants need water" is a true fact, then paradigmatic structure and the rule of inheritance lead to the fact that "white oaks need water."
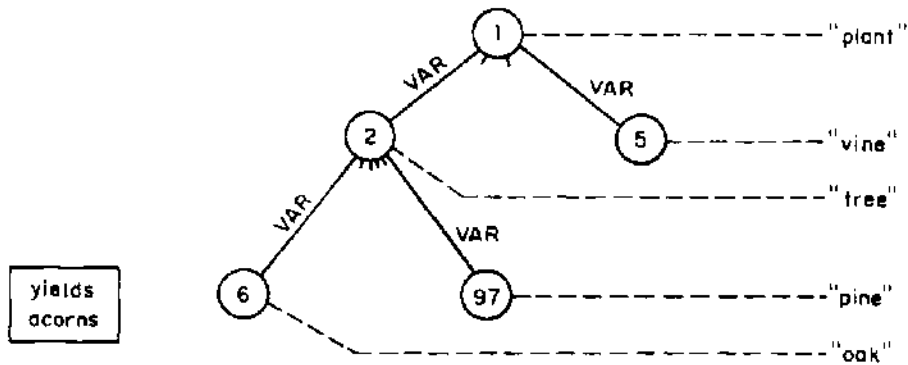
FIGURE 1. *Paradigmatic structure.*

Inheritance is a global process, requiring only the link label VAR for its definition. A search for true facts can be realized by a network in which VAR transmits activity in the direct sense, and any node receiving an impulse retransmits it on VAR links.

In the inverse sense, the variety link serves for indirect addressing. Some questions use this process; a node and a fact are specified, and the problem is to find a variety of the node for which the fact is true.

Example 7. "What plant yields acorns?" The node is *plant*, the fact is *yields acorns* (see Figure 1). The answer is Node 6, and its name is *oak*.

A paradigmatic structure can be used for qualities, activities, and other types of nodes, as well as for things. For some applications, *red* and *yellow* are linked as varieties of *colored*.

REPRESENTATION SYSTEMS

A cognitive system can contain many identical subnetworks, each connected to the rest in its own way. Representation structure and the rule of expansion conserve space. Instead of storing the subnetwork in many places, store it once as a master; elsewhere, let a single node represent it. Each representative node is linked to the master with a definition (DEF) link. What would otherwise be a link between a node in the repetitive subnetwork and a node outside becomes a link to the representative node. By the rule of expansion, any process reaching a representative node continues as if it had reached the master subnetwork.

Example 8. A network represents knowledge about concrete objects and their locations in space at various times. A frequently occurring subnetwork locates an object at one place up to a given moment and at a different place thereafter. The common factor is the combination of one object, two places, and one moment; a node to represent this subnetwork might be named *movement* (see Figure 2). A process designed to determine the location of the object at a given moment could reach the representative node; by expansion, it would continue its operation on the definition.
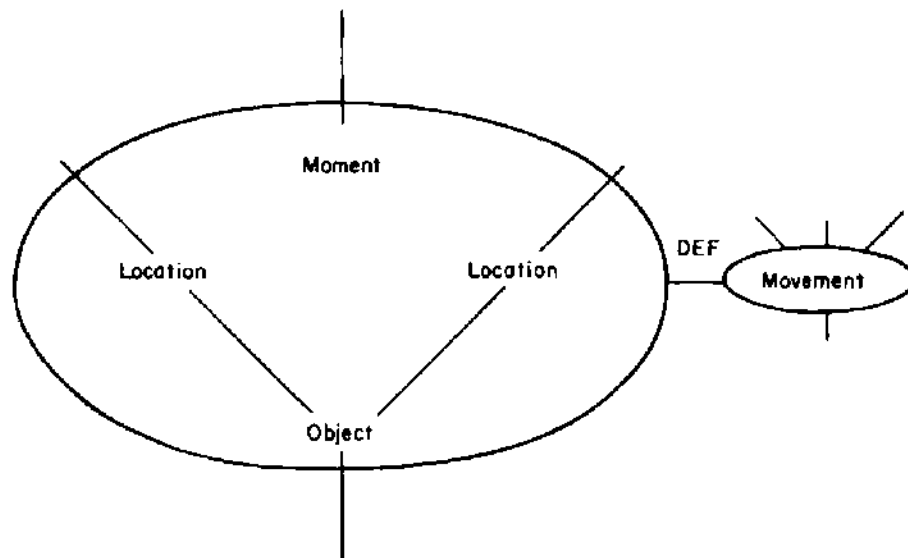
FIGURE 2. *Definition. For a more exact version of the defining subnetwork, see Figure 6.*

Definitions can be nested. In a defining subnetwork, nodes can occur that represent defining subnetworks.

SYNTAGMATIC SYSTEMS

A definition is a subnetwork linked by DEF to nodes that represent it elsewhere in the network. The defining subnetwork need not be simple; a link to one of its representatives becomes by expansion a link to one or more of its elements. The expansion process requires guidance, which is supplied in certain conditions by syntagmatic link types.

Example 9. The definition of *movement* contains four nodes: an object, two places, and a time. Each can have links outside this subnetwork; the object can be part of a paradigm of objects, the moment can be linked to other moments, and so on. Consider a node linked to a representative of *movement;* does expansion carry the link to the object, one of the places, or the moment? The substantive theory may help with the choice; for example, the link may require a node of the object type. Nevertheless, this subnetwork contains two nodes of the same type, both locations, and the hope that a substantive theory will control every choice between them seems exaggerated.

Each type of syntagmatic link corresponds to a rule for finding a node during expansion; a cognitive system has a fixed list of rules, a definition can use any subset of them. A subnetwork is not eligible to serve as a definition if it requires a rule not on the list.

Another theory allows any subnetwork to serve as a definition, and admits an unlimited number of syntagmatic link types. With each definition this theory stores an ordered list of pointers into the defining subnetwork; a syntagmatic type is a

number that indicates which pointer on the list applies. The expansion process is given node A linked to representative node B; the link is syntagmatic with number N. The process consults the definition and treats node A as linked to the node or nodes in the definition indicated by the Nth pointer.

Substantive Structures

To replace the library, the cognitive network must encompass a complete theory of the nature of the universe; in fact, since no library is monolithic, it must encompass all current and obsolete theories of the nature of the universe. Only in certain areas does philosophy instruct us adequately; a field of such scope is not to be mastered in a short time, but exploration of it seems worth the time and resources of many competent investigators.

The illustrations that follow exhibit plausible structures for aspects of knowledge about concrete objects, time, space, causality, thought, and communication.

THE CONCRETE OBJECT

A primitive node is defined externally by a perceptual system. Four primitive types are color, shape, mass, and texture; thus, *red, round, heavy,* and *rough* have perceptual definitions. Three nonprimitive types are form, substance, and (concrete) object; a form has color and shape, a substance has mass and texture, and an object has form and substance (see Figure 3).

A network has many nodes of each type. Take a node for the color *red,* one for *rectangular* shape, one for *heavy* mass, and one for *rough* texture; the object is a *brick.*

The substantive theory permits different kinds of facts to be connected to different types of nodes. An object node can be located in time and space; a form or a substance cannot. A substance can be known to have a specific gravity, viscosity, etc. A picture of an object has its form but not its substance.

A type is therefore characterized by the types that go into it and by the kinds of facts to which it can be connected. The interaction of types is not further explicated; this theory, which is very ancient, could be rewritten physically and chemically, but offers a useful level of analysis for certain kinds of knowledge.

An object can be incompletely specified. If shape and mass are sufficient to characterize *brick,* then color and texture can be specified for individual bricks rather than for the universal brick.

OBJECTS IN SPACETIME

The network is to store knowledge about the positions of concrete objects in space at different times. The knowledge may be partial. Given a time and an object, the network should be able to report its location; given a place and a time,
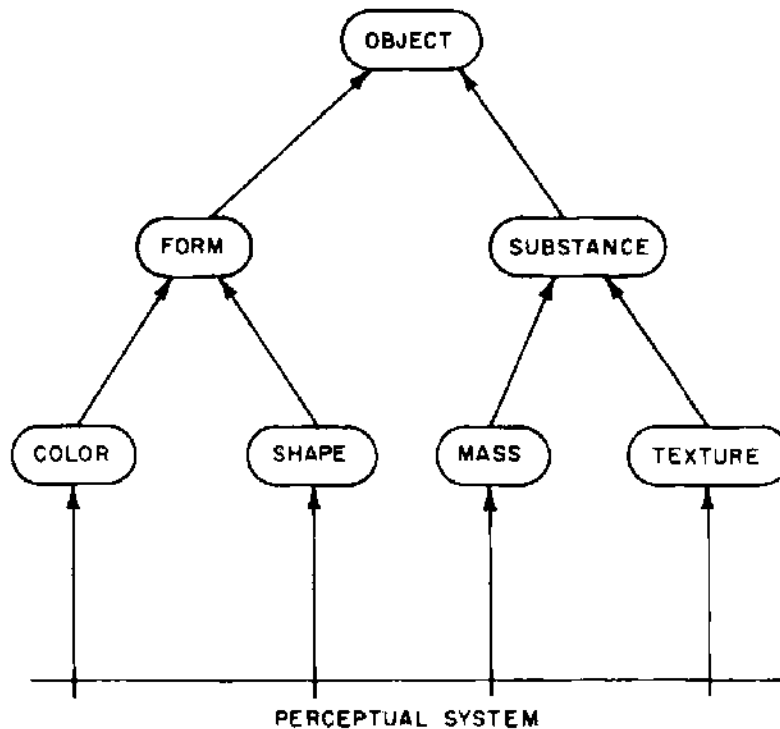
FIGURE 3. *Object construction.*

the network should be able to report what objects were present, and so on. The network should also be able to detect inconsistencies in its knowledge; no object can be in different locations at the same time, for example. Several network structures are possible.

For each object, the network has a node; it also has a node for each position in space and each moment in time known to it. A directed link between two moments points from earlier to later time.

A placement node is linked to objects, positions, and moments, as in Figure 4. If more than one object is linked, they are present together. If more than one position is linked, the placement is in a region consisting of them all collectively. If more than one moment is linked, the placement holds for all of them. Continuity requires that the positions be contiguous and the moments uninterrupted by a placement elsewhere at an intervening moment.

An internal process to determine the position of an object at a given moment must: (1) transmit a signal from the object to all of its placements; (2) transmit a signal in the network of moments in such a way that placements in effect at the moment receive a signal; and (3) transmit a signal from a placement receiving both moment and object signals to a position. Placements may be known for many objects at the moment, and for the object at many moments; the coincidence of moment and object signals determines a unique placement. The arrival of a signal at a position terminates the process.
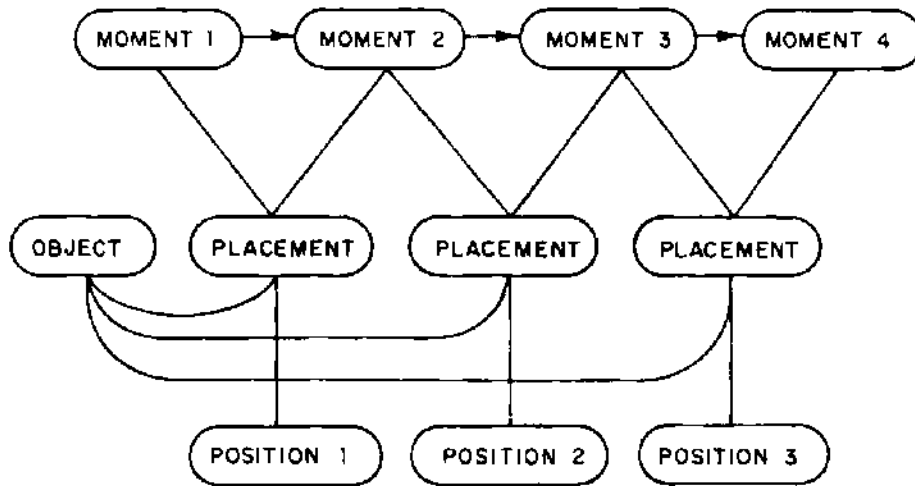
FIGURE 4. *Placements in spacetime.*

In a different structure, a movement node is linked to objects, positions, and moments, as in Figure 5. An internal process to determine the interval in which an object is in a certain position must: (1) transmit a signal from an object to all of its movements; (2) transmit a signal from a position to all movements; (3) transmit a signal from movement to moment when the movement receives signals from both an object and a position. When signals reach two moments, the process halts.

Moments are linked from earlier to later, but positions are not; they are related spatially, not temporally. The only difference between Positions 2 and 3 in Figure 5 is that Position 2 is linked to a movement at an earlier moment and Position
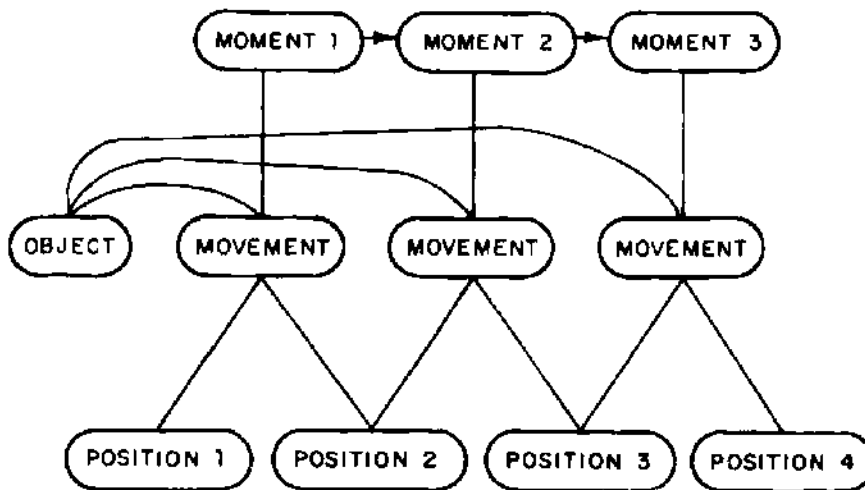
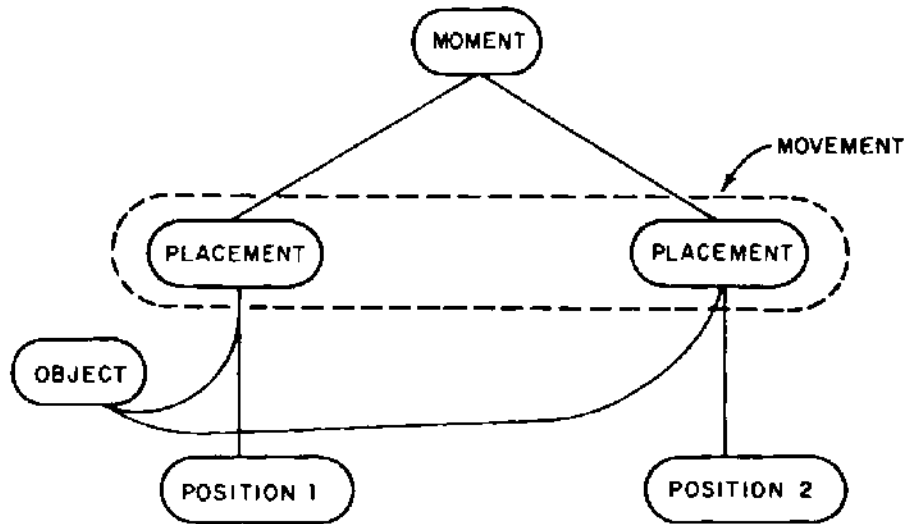

FIGURE 5. *Movements in spacetime.*

FIGURE 6. *Definition of movement.*

3 to a movement at a later moment. If that difference is lost, so is the spatial direction of the movement.

If the network contains a complete history of an object, then either movements or placements represent the knowledge satisfactorily. If knowledge is partial, one of the two node types is more efficient. If two consecutive placements are known, with the moment of transition, but other knowledge—including the beginning of one placement and the end of the other—is lacking (Figure 6), then a single movement node can replace the knowledge. Similarly, if movements to and from a position are known, then a single placement can be defined to replace the two movements.

Both placement and movement can appear in the cognitive system's transactions with its own environment. Facts and questions of both forms can be supplied, perceptions can take either form, and so on. Definitions like the one in Figure 6 serve in matching stored knowledge with input and output. If a question is asked about placement, then by inference knowledge of movements can be used to answer it, and vice versa.

A complete theory of knowledge must include geometries for time and space. Positions are related by angles and distances in some frame of reference; moments are related by the sequential links shown in the figures, but the concepts of interval and temporal quantity are needed.

THOUGHT AND COMMUNICATION

The description of cognitive systems is itself a part of a theory of knowledge. The network and processes of a cognitive system represent knowledge about the universe; but knowledge about cognitive systems can also be represented by net-

works and processors. A model of thought has nodes to represent ideas and links connecting them. It also has nodes for entities that can store and manipulate ideas, and for the manipulations. A cognitive system can use a model of a thinking person to impute intent for the effects of past actions, to predict future actions, and to design output suited to the needs of the person to whom it is addressed. The system can also use a network of ideas to represent a critique of its own knowledge: factual, plausible, hypothetical, or intentional.

An idea node corresponds to a cognitive subnetwork in approximately the same sense that a primitive node corresponds to a perceptual schema or, ultimately, a fragment of the universe. An idea can occur in speech, in text, and in components of the human mind.

A person has a mind and a body (compare the statement that a concrete object has form and substance). The components of the mind are long-term memory (LTM), short-term memory (STM), and a central processing unit (CPU). LTM and STM store ideas; the CPU operates on them.

The CPU carries out operations of perception, action, and communication. The sense organs respond to aspects of external reality; the CPU forms an idea in STM that corresponds to the content of the sense organs and LTM. Action is physical movement of the parts of the body; the CPU builds a plan in STM out of materials there and in LTM, orders movements, and regulates them in accordance with the changing contents of the sense organs. In reading and listening to speech, the idea formed in STM is influenced by the meaning, not the shape, of what comes to the sense organs. In speaking and writing, the CPU builds a plan to communicate an idea; the effectiveness of its plan is evaluated according to the meaning of what it simultaneously hears or reads.

The CPU is a processor external to LTM. According to some theories, LTM is a passive network; the programs of the CPU look at it. According to others, LTM is an active network; whatever programs the CPU has are supplemented by network processes within LTM. For example, the CPU can address an object and a moment in LTM and obtain, as the output of a network process, the position of the object at the moment.

STM is small; ideas formed there tend to vanish and be replaced by others. The actions of the CPU produce links between STM and LTM; they bring ideas out of LTM that are related to those already in STM; they sometimes commit an idea to memory by incorporating an STM idea into LTM.

The CPU can also create nodes and links in STM. If the model is rational, the CPU has a limited set of rules of inference. A rule consists of patterns and operations. A rule applies to STM if its patterns fit ideas there. When it applies, its operations create links among ideas or create a new idea by reassembling parts that fit its patterns. In a less rational model, the CPU forms links between ideas just because they are in STM together.

Inside a mind, therefore, an idea arises from perception, from communication, or from reflection—the joint action of CPU and LTM. Figure 7 shows how some ideas might be linked in a mind; to each node, of course, corresponds a network.
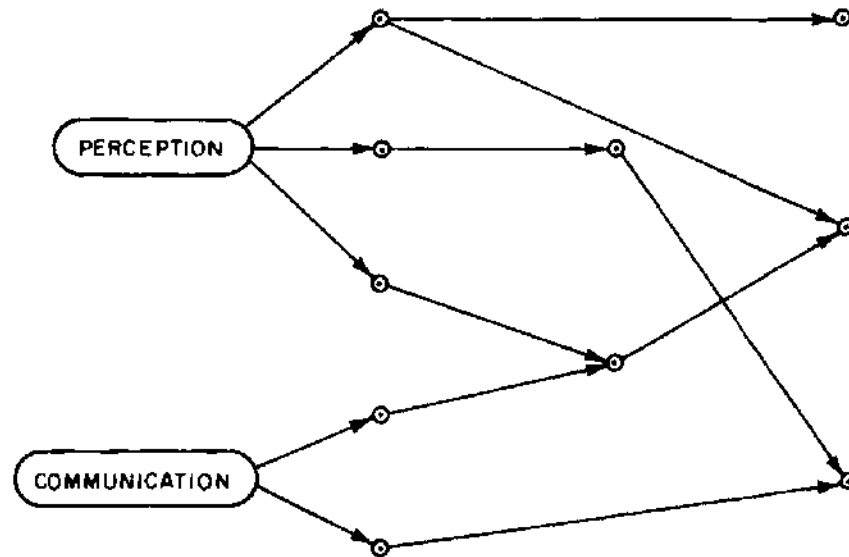
FIGURE 7. *Linked ideas. Circle: an idea. Arrow: the idea to the left is a reason for believing the idea to the right.*

Desires also reach the CPU. They stimulate it to form plans by obtaining from LTM ideas that could be carried out and produce the object of desire. In Figure 8, take the content of Idea 1 to be hunger; of 2, eating; of 3, food in the refrigerator; and of 4, cooking. The links from 1 to 2 and from 2 to 4 are purpose links: One cooks in order to eat in order to satisfy hunger. The link from 3 to 4 is a condition; the plan of cooking is a good one if food is available.

The maintenance of reason and purpose links in LTM is problematic. It may be enough, having constructed the plan in Figure 8, to retain a pointer from desire to cooking; the rest will take care of itself. It may be enough, for any of the ideas in Figure 7, having constructed the idea by a combination of perception, communication, and reflection, to retain the idea as real. Nothing goes into LTM without value; if no value is assigned, the link is unremembered.

The differences among plans, reality, and fiction are, however, crucial. If the present moment is earlier than Moment 3 in Figure 4, then the placement in Position 3 is a plan or prediction; if the plan is not fulfilled and the network re-
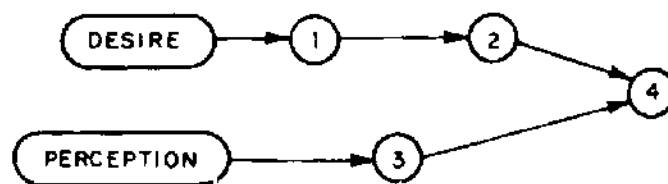
FIGURE 8. *A plan.*
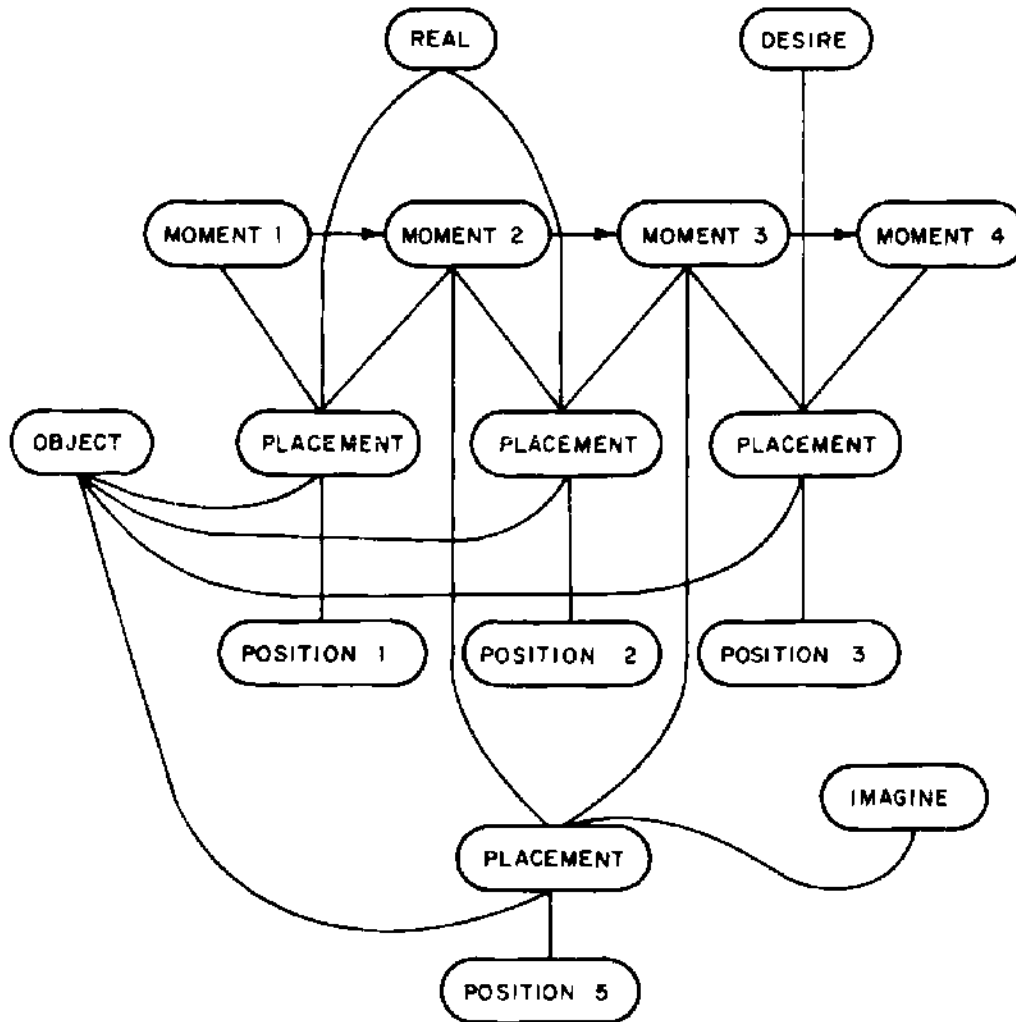
FIGURE 9. *Reality, desire, and imagination.*

mains unaltered after Moment 3, it contains an error. A prediction made in the past is a basis for inference about the present, and perhaps the best available, but it is overridden by experience. In imagination, the object may have placements in Positions 5, 6, and 7, all during the interval between Moments 2 and 3; the positions may be real, and the moments temporally ordered—in the imagination—between Moments 2 and 3; but the object does not therefore have a different history, or violate the rule of one place at a time. The diagram in Figure 9 shows a way (others are possible) of keeping imagination, plan, and reality separate.

Processes to calculate intent can use this model of the person. The network knows that person A performed certain acts and knows some of the effects of those acts. The network takes the effects as desired and formulates a plan to achieve them. The plan must include some of A's known actions, and may include others if

ignorance of them is plausible. The plan may also require as conditions facts known to be true or possibly true but not known. If A knew all these facts, and knew that his actions would produce their effects under these conditions, then A acted with intent. The network performing the calculation must assume that A's computational capacity is not less than its own, but may distinguish between facts known and unknown to A.

A system that produces speech or text loses some of its value if its output is not concise, informative, and comprehensible. The process of deciding what to report can use the network's model of the client. When the system selects an idea for output, it formulates the briefest possible report; if comprehensible, it is best. The system can check by using its own comprehension process as a model of the user's CPU, but it must then rely in LTM on ideas marked as known to the user. If comprehension fails, the system selects an idea encountered in the comprehension process but not known to be known to the user. Formulating the briefest possible report of two facts together, it repeats the comprehension check. Every failure enlarges the report.

CAUSALITY

Science, according to a modern philosophy, is entirely descriptive. It describes states of affairs, and sequences of states; its laws say what states and sequences occur. But science can achieve this degree of purity only by using a level of detail inaccessible to a cognitive system. A network can store facts about elementary particles and fundamental forces, or about houses, cars, and persons; but to make predictions about the behavior of cars by processing facts about elementary particles is beyond the foreseeable capacity of information processors.

Theoretical difficulties also arise. Physics and chemistry can be connected, but the formulation of biological problems in chemical terms is incomplete and the mind–body problem is unresolved. Some thinkers believe that until these difficulties are resolved the storage and processing of facts about behavior is useless; others think that the difficulties are in principle irreducible. Those who prefer to experiment with cognitive systems at a gross level require a theory that circumvents the unsettled issues and the infeasible computations.

Causality links systems without specifying mechanisms of interaction. A causal link between mind and body represents the fact that thought can lead to action without saying how. A causal link between physical events represents the fact that one leads to the other without analyzing their connection in terms of particles and state sequences. Inferential processes can use causal linkages to predict the future, formulate plans, and organize knowledge of the past. If the mechanisms were known and computable, errors of prediction might be avoided—but the mechanisms are unknown.

A person has a mind and a body; the mind is composed of a CPU, an LTM, and an STM; whereas the body is a concrete object composed of trunk, head, and limbs. An *act* is the conversion of an idea into a movement. In Figure 10, a causal
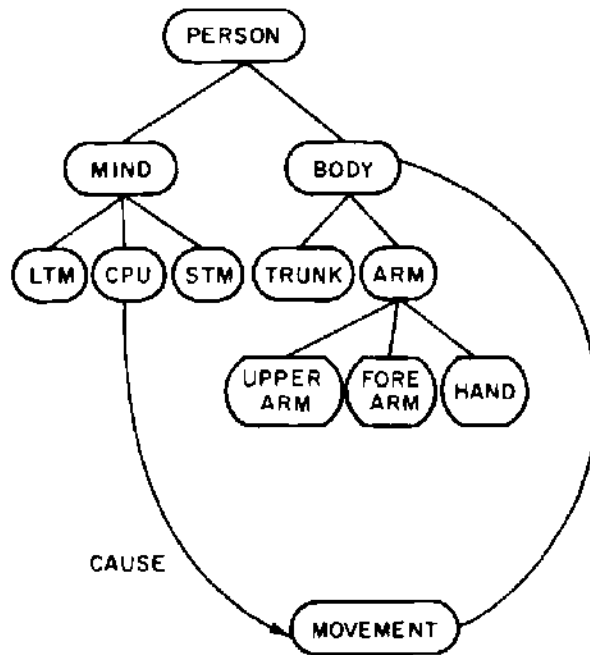
FIGURE 10. *Mental control of physical activity.*

link connects the CPU with the movement. By a rule similar to paradigmatic inheritance, the fact that the body can move is true by inference of all the components of the body.

The movement of one concrete object can impart motion to another; the physical mechanism is complex, but a causal link summarizes it (Figure 11).

Subnetworks with chains of causality are frequent. By suitable definitions they can be reduced to single nodes; some syntagmatic types familiar in linguistics and philosophy result (Figure 12). An agent (AGT) is a person whose act initiates a causal chain; an instrument (STR) is a concrete object in an intermediate movement; and patient (PAT) is the object in the last movement in the chain.

A cognitive system needs many processes that follow or construct causal links. Given two events in STM, shall the CPU make a causal link between them? When a received communication contains two events and a causal link, shall the CPU
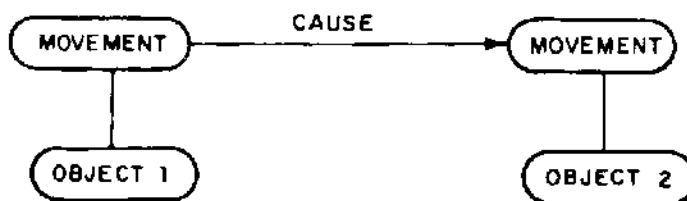
FIGURE 11. *Causality between movements.*
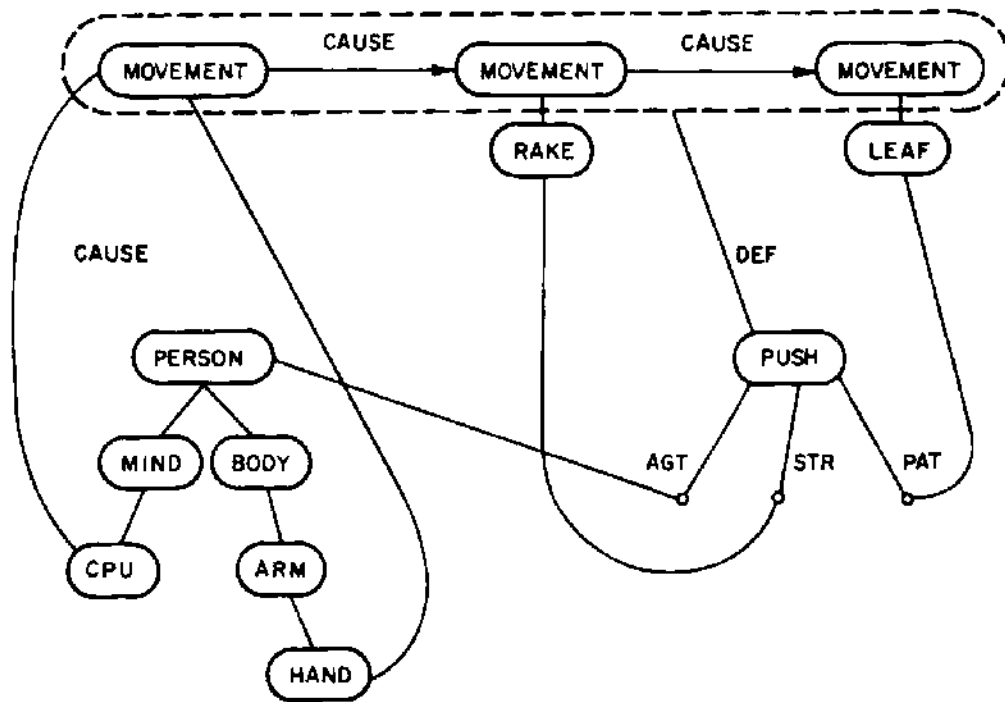
FIGURE 12. *Syntagmatic links.*

accept or reject it? Given a current state of affairs, what will occur next? Given a desired state of affairs, what actions would lead to it? When the system inserts a causal link, it asserts the existence in the universe of a mechanism leading from one to the other; when it follows a causal link in predicting or planning, it assumes that the mechanism will work. Without the mechanisms, the past is an arbitrary collection of facts and the future is neither predictable nor controllable. With them the past has structure and the future is calculable—within the reliability of the mechanisms. Yet the cognitive system need not model the mechanisms; it uses only their inputs, outputs, and possibly their reliabilities.

Information Retrieval

As a model of a reference tool or library, a cognitive system consists of an active or passive network—LTM—in which knowledge is stored, a smaller network—STM—for temporary storage of new information and of questions, and a CPU. Knowledge has the same form in LTM and STM; the system can have components to translate between network form and linguistic form, such as strings of characters on a typewriter.

The CPU must detect linkages between STM and LTM; it must attach new knowledge to old when information is received, and select related knowledge to answer a question.

INTEGRATION

According to one theory, the CPU is a cognitive network. Some of its nodes have external linkages to LTM, STM, and the sensorimotor system. Integration is the CPU process of forming linkages between STM and LTM. In an information retrieval system, this process starts when a fact or question is received. A sense organ or linguistic store contains a representation of the input; the problem is to form a network in STM under the joint guidance of input and knowledge.

Segments of the linguistic input are linked as names to nodes in LTM. Some linguistic units are ambiguous; they are names for several nodes. In general, linguistic units are vague; they are names for nodes high in paradigmatic structure. Integration must select a single node, as specific as possible.

The linguistic input is organized syntactically into overlapping facts. The syntax of a natural language is a guide to the assignment of a structure to input, but syntax is ambiguous. Given a string and the syntax of its language, more than one structure may be possible. Since different syntactic structures generally correspond to different facts, integration must select a single structure for the input.

The input contains control signals for the integrator. An outstanding example is the English use of prenominal determiners. By the use of *a, an, the, some,* etc., the input signals whether a node already in the network or a new node is intended. Probably every language has ways of indicating whether a fact should be treated as known or new.

The input cannot be incompatible with what is known. Tests for compatibility are the system's only means of eliminating vagueness and ambiguity. Input intended to contradict known facts can contain signals: "In spite of what you think . . . ." Otherwise the system has to assume that compatibility validates an interpretation and the incompatibility refutes it.

A few examples illustrate the diversity of programs required for a powerful integrator.

A portion of input is tentatively interpreted as stating a placement. Pointers to a node for a concrete object, to a moment, and to a position are given: (1) Direct contradiction: If the object was known to have a different placement at the same moment, this interpretation of the input is rejected. This test requires spatial and temporal structure; placements at Buffalo and in New York State are not incompatible, and placements in Buffalo and Albany need be separated only by the time to travel from one to the other. (2) Inferential contradiction: The network cannot store every fact in completely analyzed form; it must conserve space by using definitions and paradigms. The input placement may be incompatible with inferences: from movements, from participation in events (which have placements), from placement of a composite (a person's hand inherits the placement of the person), and so on.

A vague name is given, and a fact concerning it. The vague term is linked high in a paradigm; the fact matches exactly a fact linked to a node low in the same paradigm. The integrator moves its pointer to the lower node.

Two portions of input are tentatively interpreted as stating facts compatible with the network. Nothing in the input links these two facts; the integrator seeks a short chain in LTM from one to the other. In the absence of such a chain, the input is incoherent. However, the forms the chain can take are protean. Paradigmatic linkage, definitional structure, causality, and any other kind of inference can be used in combination to produce the chain.

SELECTION

A question calls for a small portion of what the network contains or can infer. Integration links the question into the network; selection is the process of reaching out from points of attachment to material the client can use.

The simplest questions contain control signals that guide the selector. Interrogative words such as *who* and *when* call for identification of a node, and integration should point to the one intended. If the node has a name, the selector can give it; otherwise, identifying facts known to the client can be selected.

The most difficult questions have the form "Tell me about X." The problem is to select the right kind of facts, and among those the most important. The types and subtypes of nodes provide a basis for a theory of kinds of facts; if X is the name of a person, paths can be found to facts about the nutrition of animals and about the viscosity of substances, but only by following links between subtypes. A question about a person is more reasonably answered with facts about interpersonal relations and activities.

The importance of a fact can be stored with it as a number or calculated from the importance of the nodes it contains. In selecting facts about X, the importance of X is no help. If X is George Washington, and the United States is a more important node than Martha Washington, then X's involvement with the country is more important than his marriage. Thus a short article in a reference work is more likely to mention a person's nationality than his spouse. A fact linked causally to many other facts is important; if X is Abraham Lincoln, "He freed the slaves" is an important fact about X because it is the cause of many other facts.

Another mechanism for selection uses preestablished outlines as guides. George Washington is a historical personage; the outline specifies in more or less detail what to include in a brief description of a historical personage. Facts about Washington are matched to the patterns in the outline and those that fit are supplied. The apple is in more than one category; to obtain a good report, the client must specify the agricultural outline, the culinary outline, or the consumer's guide. Psychology, psychiatry, and sociology can have quite different outlines for the same X.

Robotics

A robot is an information processing system with links to components for perception of the environment and mechanical action. The design of perceptual and motor

components poses many problems, but working robots with various specialized capabilities have been demonstrated. Other robots have been simulated in general-purpose computers; if a robot is to accept spoken or typed commands, or plan its activities over an extended period, the structure of its central control system must be sophisticated.

In perception, the robot's CPU controls the formation in STM of an image of the situation; the content of the sense organs is ambiguous and vague, but the image is more precise because it must be compatible with the prior content of LTM.

In action, the CPU sets goals; sensorimotor interaction controls output mechanisms so as to meet them. This interaction is what makes it so hard to design a robot for such a simple task as catching a ball.

A plan is a sequence of goals. A robot batter standing at the plate has a plan: (1) hit the ball, (2) run the bases, (3) score. Sensorimotor coordination must take care of hitting the ball; the CPU cannot reasonably work fast enough to adjust the bat after the pitch. If the batter is stuck on second, however, the CPU may have to calculate when to run for third, because the conditions are too complex for the sensorimotor coordinator to store.

As aids in planning, the LTM of a robot can have a set of principles. A principle consists of an action, a condition, and an outcome; when the action and the condition occur simultaneously, the outcome is predicted. If LTM is an active memory, the process is approximately: (1) spread activation from the current image of the situation to all conditions and excite those that match; (2) spread activation from the current goal to all outcomes and excite those that match; (3) arouse for consideration all principles with excited condition and outcome. The CPU then has to examine the actions.

A principle can prevent an action. When an action is up for consideration, the process in an active LTM is: (1) spread activation from the current image of the situation to all conditions and excite those that match; (2) spread activation from the contemplated action to all actions and excite those that match; (3) arouse for consideration all principles with excited condition and action. The CPU has to examine the outcomes; if any are bad, the action is rejected.

A robot chess player, automobile driver, or cook can operate in this manner. For the chess player, the current situation is the board; a goal might be control of the center. The active network finds a few principles and the CPU examines them one at a time. For the driver, the current situation is the highway; a goal might be to drive as fast as is safe. The active network finds a principle with an action like "pass the car in front of you" and the CPU tests it.

A robot may also need some predictive laws: A law connects a current situation with a future situation on the assumption that no action is taken.

The robot driver of an automobile considers the action of overtaking a slower vehicle; another car is beside the robot's; a principle says that overtaking would lead to a wreck. But a predictive law says that the car on the left, going faster than the robot, will be gone soon. The robot can wait.

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DAVID G. HAYS

NEUROSCIENCE INFORMATION RESOURCES

Neuroscience will be defined, for the present purposes, as the body of knowledge that relates to the brain, spinal cord, peripheral nerves, and autonomic nervous system; the special senses of touch, taste, hearing, smell, speech, and vision; intellectual functions; how the nervous system functions, its diseases and disorders, and the treatment of these diseases of the central nervous system and special senses.

This body of knowledge is divided into roughly two segments: (1) clinical information, relating to the disease problems of the nervous system and special senses; and (2) nonclinical information which relates to the broad anatomical, chemical, and physiological basis for the function of the brain and nervous system. The clinical science information includes neurology, neurosurgery, psychiatry, psychology, neuropathology, neuroradiology, ophthalmology, otolaryngology,

audiology and speech, linguistics, and fringe areas in other disciplines. The non-clinical information includes neuroanatomy, neurochemistry, neuropharmacology, neurobiology, neurophysiology, neurobiophysics, neuroendocrinology, electrophysiology, psychology, and behavioral studies; and studies of genetics, immunology, microbiology, mathematics, physics, and other disciplines as they apply to the function of the brain and nervous system. These definitions are broad and somewhat arbitrary as there are shades of gray between them as they blend one into the other, and information from one area is continually used by investigators and practitioners of the other.

The neuroscientific audience whose needs are served by this body of information includes practicing clinicians, paramedical personnel, medical educators, and research scientists working in the areas already named. The size of this group of people at the present time is estimated to be 20,000 physicians and scientists and an additional number of nondoctorate personnel who are involved in research or patient care. This group is comprised of about 2,800 neurologists, of whom approximately 550 are faculty of medical schools; 650 are in training or other full-time hospital jobs; and the remainder, many of whom do some teaching, are in private practice. There are about 2,500 neurosurgeons, of whom 150 are full-time faculty, 500 in training, and the rest are in practice with varying amounts of teaching responsibility. In otolaryngology there are about 6,000, of whom 4,000 are in private practice, 700 in training, about 120 full-time on faculties, and the other in some laboratory occupation. The numbers for ophthalmology are roughly the same as those for otolaryngology, about 6,000, of whom about 5,000 are in private practice, 700 in training, and 120 in full-time faculties. Nonclinical scientists engaged in neuroscience-related work are harder to identify, but it would seem from studies made by the National Science Foundation that there are about 3,500 to 5,000 working in the problems related to neurosciences. In the areas of psychiatry and psychology there are many, many more, particularly in the area of speech, speech pathology, and audiology; there are at least an additional 4,000 working in the clinical field and maybe more. These figures will be only "ball park" estimates when this is published.

The annual increment of new published material is staggering and can be appreciated by considering the estimates of new journal articles which are published each year. The Brain Information Service at UCLA, which is primarily interested in the nonclinical area of neuroscience, adds 40,000 new articles per year to its data base. In the clinical areas of neurology, neurosurgery, otolaryngology, speech pathology, and ophthalmology there is an almost equal number. In the area of psychology and psychiatry, there are about 25,000 a year, based on the input to *Psychological Abstracts*. This adds up to an overall total of about 100,000 per year. These figures are for journal articles scattered through nearly 1,700 different journals. Not only is the annual output staggering, but this output is doubling every 5.5 years, as estimated from the increase in the input to the Brain Information Service data base.

The sources for neuroscience information are similar to those of biomedicine in general, i.e., periodicals, abstracting services, indexes, professional meetings, text

books, alerting bulletins, newsletters, special information, and personal communications. Many of these sources are collected in a book titled *Information Resources for the Neurosciences,* DHEW publication No. (NIH) 74-554. It is obtainable at the U.S. Government Printing Office, Washington, D.C. 20402, for $1.25. This volume has five sections: (1) audiovisual aids; (2) bibliographies, abstracts, and indexes; (3) information analysis centers; (4) journals; and (5) directories, translations, and organizations. It was published in 1973, so that there are many new items not included, but it still is a very valuable source book.

The specialized information centers of the National Institute of Neurological and Communicative Disorders and Stroke are great sources of current information in the fields covered. At present there are three specialized information centers: the Brain Information Center, at UCLA, covers the nonclinical neurosciences; the Information Center for Hearing, Speech and Human Communication, at Johns Hopkins Medical School, covers the problems of communication; the Clinical Neurological Information Center, at the University of Nebraska, covers the clinical problems of neurological diseases; and the abstracts section of the journal *Stroke* covers the stroke problems. These centers are part of the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) scientific information program to help physicians and scientists working within the NINCDS missions cope with the information accumulation in their fields.

The Neurological Information Network of NINCDS was born at a conference sponsored by the National Advisory Council of the then National Institute of Neurological Diseases and Blindness in March 1963. It was recommended, and later approved by the NINCDS National Advisory Council, to establish a number of specialized information centers supported by contract funds. The objective of these centers was a service of the NINCDS for the biomedical community. The centers were to identify, collect, and store for retrieval all new information items relating to their areas of responsibility. They would then distill and repackage the information contained in these items so that physicians and research scientists could get their appropriate information in a useful form as soon as possible.

The term "specialized information center," as used here, must be defined and distinguished from a "specialized library." The specialized library contains a collection of documents relating to a subject and responds to inquiry by producing documents or lists of documents. The specialized information center should be capable of responding to appropriate questions in a substantive way using pertinent information in any form, as well as providing documents and bibliographies. It performs services to its users by handling material contained in assembled documents related to its subject. To be more precise, a specialized information center has two parts: one part for documentation, i.e., to collect, identify, index, store, and retrieve documents and other information items concerned with a defined field; and the other part for "information analysis," i.e., to evaluate, distill, and otherwise utilize, repackage, and disseminate the information contained in the documents. "Documentation" and "information analysis," when used in this report, will have these connotations.

It soon became apparent that a complete specialized information center for every categorical problem area of the NINCDS would not only be prohibitively expensive, but it would result in enormous duplication of effort. Therefore, a network plan was developed to achieve the goals set forth in the guidelines of the NINCDS Advisory Council, eliminate duplication of effort and be economically feasible. Therefore, the plan of the Neurological Information Network envisioned large units incorporating both information storage and retrieval, and information analysis. These were to be in universities with strong biomedical libraries and ongoing research programs in areas relevant to NINCDS responsibilities. These core centers would, in addition to their own information analysis activities, support information analysis satellites at other research centers where specific categorical research programs are underway. The information centers were to be integrated with each other and with the National Library of Medicine (NLM) to avoid duplication of work. Because of the existence in the National Library of Medicine of MEDLARS, which would serve as a major source of input, the policies and methodologies of the National Library of Medicine were made overriding and the NLM served as a focal point for the development of compatible systems. When fully operational, this network of specialized information centers was planned to cover all fields for which the NINCDS is responsible.

The total body of knowledge in the neurosciences was divided, arbitrarily, into four categories for the purposes of the network. They are: (1) neuroscience items not related to categorical diseases, (2) items related to categorical diseases of the nervous system, (3) vision and diseases of the eye, and (4) hearing, speech, and language. A fifth division was indicated on the diagram because it seems probable that it might be required for certain areas which did not fit into the other four categories. The establishment of the National Eye Institute eliminated the need for the vision and diseases of the eye category.

Each of these large specialized centers included documentation for its total area, but carried out information analysis in only small, well-defined segments of the area of documentation. With full development, each documentation center was to support several "information analysis satellites" in subareas of its field, as indicated by the bottom row of boxes in the organizational diagram (see Figure 1). The documentation service was to be a stable structure, but the information analysis activities were expected to change according to need. The subject areas of the information analysis centers were determined by NINCDS program needs, the Scientific Information Program Advisory Committee, the NINCDS Advisory Council and its subcommittees, the intramural research program and its Board of Scientific Counselors, other scientists, professional societies, and other authoritative and competent groups.

The network plan called for a two-phase development, the first phase being partial development and evaluation, and the second, expansion to full operation or modification as indicated by the evaluation of the first phase. The development and evaluation phase, to take 4 to 5 years, included the initiation of four specialized information centers: for Parkinson's and allied disorders (College of Physicians and
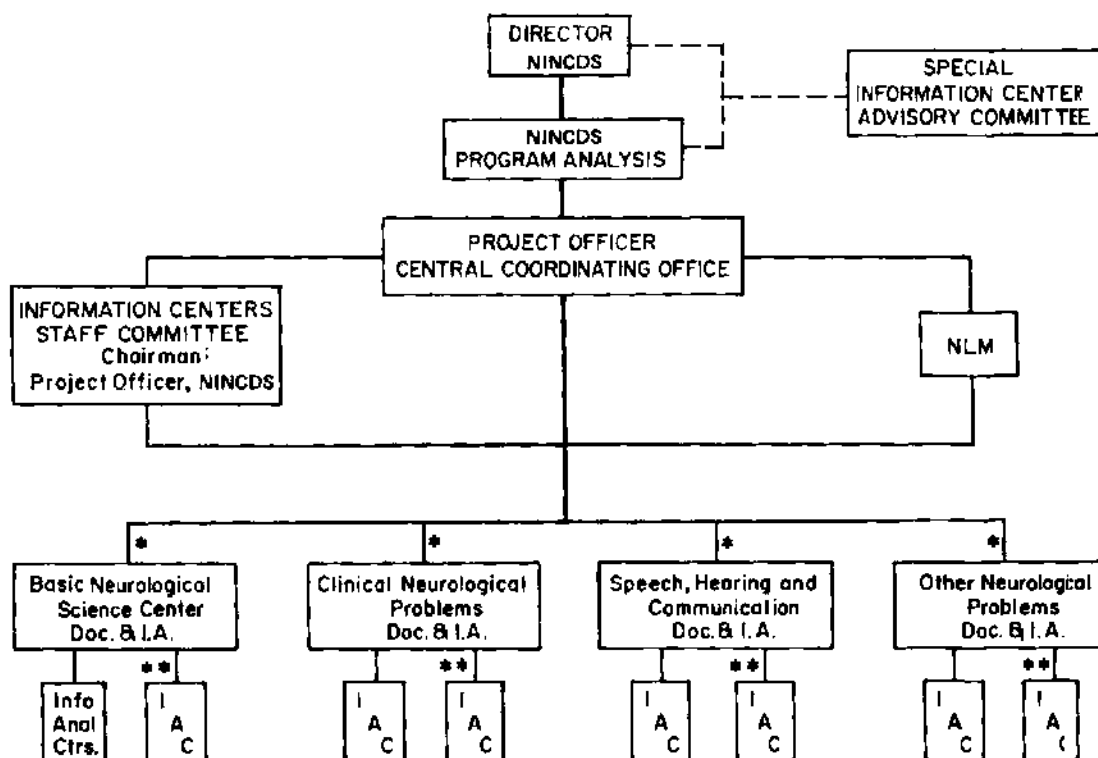
FIGURE 1. *Table of organization of NINCDS. The boxes marked with a single asterisk represent the first phase and have "documentation" activities plus "information analysis" activities. The boxes marked with a double asterisk represent the second-phase expansion and have only "information analysis" activities.*

Surgeons, Columbia); Hearing, Speech, and Disorders of Human Communication (Johns Hopkins University Medical School); and Cerebrovascular Alerting Service (Mayo Foundation).

The NINCDS Scientific Information Program Advisory Committee (SIPAC) was established to review the contracts as they come up annually and plan for the review at the end of the first phase. The intercenter coordinating committee was activated and met regularly twice a year. To assist in planning, a management analysis was made by a nongovernment management corporation, and its recommendations incorporated into the plans.

The first phase was completed and reviewed by the SIPAC. They enthusiastcally endorsed the network concept and felt that it had had a significant impact which justified its continued development. They recommended that:

1. The Parkinson's Information Center at Columbia be phased out.
2. The NINCDS OPA explore commercial or other means of perpetuating the Parkinson's Disease Alerting Service.
3. A Specialized Information Center for Clinical Neurological Problems be established.
4. The central facilities for the network be strengthened so that more service to the network can be provided.

5. It be stressed to the centers that the prime objective of the network is to help scientists and physicians handle the large volume of new literature.

6. Every effort be made to efficiently use all available input services such as MEDLARS and only do indexing on items that are not covered by the services.

These recommenadtions were as far as possible implemented, but because of inflationary pressures and budget cuts by Congress, the development of the NINCDS information network had to be curtailed so that at the present time the information services are limited to the Brain Information Service (BIS) at UCLA, the Information Center for Hearing, Speech and Human Communication (ICHS) at Johns Hopkins, the Clinical Neurological Information Center (CNIC) at the University of Nebraska, and the Cerebrovascular Abstracting Service at the Mayo Foundation, all operating at reduced scope.

The alerting service bulletin, formerly produced by the Parkinson's Information Center, was continued by the NINCDS using a monthly MEDLARS retrieval. This bulletin, however, contains only citations of Parkinson's disease and related disorders. It does not contain citations on peripherally related basic science since MEDLARS cannot provide retrieval of this complicated nature.

The BIS covers the nonclinical neurosciences. The service surveys some 1,700 journals for items not included in the monthly tapes from the National Library of Medicine. It prepares and distributes, for a fee, special alerting bibliographies in various subfields of neuroscience. It covers scientific meetings and publishes reviews and summaries of the proceedings. BIS prepares special review articles and monographs, helps with meetings, and provides some question answering and bibliographic searches. The service prepares an annual catalog of output and services, which can be obtained by writing to:

The Brain Information Service
Center for Health Sciences
University of California, Los Angeles
Los Angeles, California 90024

The Clinical Neurological Information Service at the University of Nebraska covers clinical neurological and neurosurgical problems. It does not maintain a data base, as the National Library of Medicine is adequate. The main output of this center is an alerting bulletin called *Concise Clinical Neurological Review*. This bulletin, which comes out weekly, gives the major claims made by the authors of journal articles. They are grouped in appropriate sections so that all the material relating to one subject appears together. The statements are numbered and these refer to complete citations in the accompanying bibliography. The center also sponsors special reviews and subjects selected by their National Advisory Committee. Inquiries should be addressed to:

The Clinical Neurological Information Center
The University of Nebraska Medical School
42nd and Dewey Avenue
Omaha, Nebraska 68105

The Information Center for Hearing, Speech and Disorders of Human Communication encompasses all aspects of hearing, language, speech, and human communication excluding the physiology of vision. The center receives monthly tapes from the National Library of Medicine which contain *Index Medicus* citations which fall within the scope of this center, and in addition the center identifies other pertinent items by scanning about 1,500 journals, which are added to the NLM tapes. The center publishes a regular alerting service which is available on subscription. It also provides some retrospective search services in the form of bibliographies, annotated bibliographies, extracts, abstracts, and narrative reports. More information can be obtained by writing to:

> The Information Center for Hearing, Speech and Disorders of
> Human Communication
> Johns Hopkins Medical School
> Baltimore, Maryland

The Society of Neurosciences is particularly concerned with the communication problem and has established a committee on scientific communication to explore new ideas. The society is experimenting with various types of "expanded abstracts," "symposia publications," and "audiovisual productions." More information about these programs must be obtained from the Society of Neurosciences headquarters at 9650 Rockville Pike, Bethesda, Maryland 20014 (Mrs. Marjorie Wilson, Executive Secretary).

Information service relating to the problem of stroke is provided through an abstract section in the journal *Stroke*. This section contains abstracts of the important articles relating to the stroke problem. They are prepared by the Mayo Foundation under contract to the NINCDS.

Psychological Abstracts, generated by the American Psychological Association, is an abstract journal and a computerized data base of abstracts of almost all of the articles in the field. The computerized abstracts allow one to search title, author, journal, and abstract. While oriented to psychology, there is much additional important information easily available. For information write to:

> P.A.S.A.R
> American Psychological Association
> 1200 17th Street, N.W.
> Washington, D.C. 20036

The *Excerpta Medica Abstracts* are a very important information source, and are available in an "on-line" computerized system for searching. These abstracts of pertinent articles culled from the world literature include both clinical and nonclinical material. They cover many items not in other data bases, particularly foreign-language articles. The tapes are available for searching in the U.S.A. through Informatics. For further information regarding searches and use of this data base write to:

> Informatics
> Attention: Molly Woolf
> 6000 Executive Blvd.
> Rockville, Maryland 20851

EDGAR A. BERING, JR.

NEVADA LIBRARY ASSOCIATION

In 1946, a small group of six librarians met in Reno, Nevada to discuss the possibility of forming a state library association. They drafted a letter to other librarians in the state giving the following reasons why the establishment of the Nevada Library Association (NLA) would be of value to the state:

1. Act as a clearing house for library information in Nevada, through meetings and a published newsletter.
2. Act as a forum for presenting new ideas which may benefit Nevada libraries.
3. Act as a group to protect or broaden the scope of Nevada library service, and call attention to the work of Nevada's libraries.

The letter of the Committee to Organize a Nevada Library Association was signed by the six people who were, a few months later, to become the charter members of the Nevada Library Association: Mr. E. C. D. Marriage, librarian, Nevada State Library; Mrs. Lois Bicknell, librarian, Reno High School; Miss Cornelia D. Provines, librarian, Nevada State Historical Society Library; Mr. Edwin Castagna, librarian, Washoe County Library; Mr. James J. Hill, director of libraries, University of Nevada; and Mr. Marco G. Thorne, reference librarian, Washoe County Library.

To quote from Edwin Castagna's address before the 12th Annual Convention of the Nevada Library Association, *Books and Libraries In the Sweet Promised Land of Nevada:*

It was Marco Thorne in 1946 who suggested the establishment of the Nevada Library Association. It seemed a rather far-fetched idea at first. But we called a few people together. And as I recall, at that first meeting were Jim Hill, University Librarian, Charles Marriage, State Librarian, Miss Cornelia Provines, who was an early member of the California Library Association, and then cataloging the collection of the Nevada Historical Society, Marco Thorne, and myself. Alene De Ruff soon joined us. Here we were. A small handful of people in one corner of the State. However, Miss Provines reminded us that the California Library Association started with just a few people, and she fired us up to go ahead. We sent out a call for the first convention and were surprised when some thirty people, including Mrs. McKinster from Las Vegas, and Byrd Sawyer of Fallon, and others responded to the call. . . . I was honored at that meeting by being elected first president of the Nevada Library Association. . . . We took a booth each year at the Nevada State Fair at Fallon to introduce the concept of modern library service to the citizens. After this period of agitation and education, we were bold enough to approach the Legislature. It was our belief that the key to library development in Nevada was the State Library. We felt several things were needed and importantly among them provision for the appointment of an adequately trained State Librarian, a reasonable budget, and authority for libraries to cooperate with each other in the formation of multi-county or regional libraries. Our proposal for a stronger State Library became law and this law, I believe, having been improved a number of times over the years, now governs our State Library. This was the first great accomplishment of the Nevada Library Association.

The first *Constitution*, adopted June 4, 1946, stated that the object of the Nevada Library Association shall be to promote library service and librarianship. In 1963, the NLA became legally a nonprofit corporation created to promote library service and librarianship in Nevada, and in 1973 according to Internal Revenue Service Rule C6, a tax-free corporate body. In the 1973 *By-laws*, the NLA states:

> Article II. Purpose: The purpose of the Nevada Library Association shall be to promote library service of the highest quality for all present and potential users of libraries in Nevada. The Association is organized and operated for educational and literary purposes, no part of the net earnings of which inures to the benefit of any private individual or member.

The association has an elected president and a 15-member board of trustees who have the vested corporate powers of the association. The board of trustees consists of the president, vice-president/president-elect, the executive secretary, the treasurer, the chairperson of each section, the immediate past president, a representative from each NLA district, and members at large elected to bring the board up to 15 members. Ex-officio, nonvoting members shall be the state librarian, the library representative of the state Department of Education, the director of one of the University of Nevada System libraries, who shall serve for 3-year terms; and NLA delegates, if any, to the national and regional organizations; and the councilor of the Public Library Association of Nevada/Nevada Association of Library Trustees section.

The Nevada Library Association during its first years was organized into geographical districts reflecting the interests of all groups within the boundaries of the district. The Southern District was formed in 1950 with Mrs. Reba McKinster of Las Vegas as its first chairperson. At that time it was to include the counties of White Pine, Lincoln, Clark, Nye, and Esmeralda. The Southern District, in cooperation with the State Library, sponsored the first Audiovisual Workshop for librarians in 1959. By 1958, two other districts had been formed, a Northwestern District, and the White Pine District, which included the counties of White Pine, Nye, and Lincoln and which had emerged from the Southern District—and informal talks about the formation of an Eastern District had been held. By 1959, the proposed Eastern District was formed as the Northeastern District. As of 1974, the White Pine District was no longer a separate district since two of the counties, Nye and Lincoln, had merged with the Southern District and White Pine County itself with the Northeastern District; the Northeastern District includes the counties of Humboldt, Elko, Lander, Eureka, and White Pine; the Southern District includes the counties of Clark, Esmeralda, Nye, and Lincoln; the Northwestern District includes the counties of Washoe, Pershing, Storey, Churchill, Carson City, Lyon, Douglas, and Mineral. Each district is governed by its own rules of procedure, which must not be in conflict with the *By-laws* of the association. With the passage of new by-laws for the association in 1973, each district elects a member to represent the district membership on the Board of Trustees of the Nevada Library

Association; each district also elects a chairperson and such other officers as it deems necessary.

The Nevada Library Association is divided also into sections reflecting profession interests; each section is governed by rules of procedure which must not be in conflict with the *By-laws* of the association. The elected chairperson of each section is a member of the NLA Board of Trustees, and each section elects such other officers as it deems necessary. At the present time, the Nevada Library Association has six sections. The first section was formed in 1958 by the school librarians. The first chairperson was Miss Mildred Pierce. The Nevada Association of School Librarians (NASL) has been influential in changing legislation relating to school libraries in Nevada. It jointly sponsored a series of workshops on school library problems for school librarians, with the Nevada State Department of Education and the University of Nevada, and it was influential in adding to the curriculum of University of Nevada, Reno and University of Nevada, Las Vegas courses in school librarianship. In 1959, 1960, and 1963, NASL held spring meetings for school and public librarians, called the School Library Conferences. As early as 1959, NASL was actively campaigning with the Nevada State Department of Education for a qualified library consultant position; in 1961 an English-Library Consultant office was funded. With the advent of the Federal Elementary and Secondary Education Act, Title II funds, the consultants office was later merged with the state Education Office for the dispersal of federal funds. The Nevada Association of School Librarians was responsible for the School Library Development Project and the publication of *Standards for Library Instructional Materials Centers in Nevada*.

During the 1958 annual convention a committee was formed by some of the public librarians and library trustees to consider the feasibility of forming a trustees section. In 1959 the Nevada Association of Library Trustees (NALT) was formally organized and accepted as a section of the Nevada Library Association. Mrs. Glen Griffith was the first acting chairperson as the section was being formed and Mrs. Ruthe Gallagher was the section's first elected chairperson. The purpose of NALT was the promotion and fostering of the development of public libraries in Nevada. One of its first projects was a request to the Governor of Nevada, Grant Sawyer, that a Governor's Conference for Library Trustees be called. Governor Sawyer complied, and between 1960 and 1964 he called four such training conferences for library trustees. Nevada Association of Library Trustees has also compiled and published a *Handbook for Nevada Library Trustees*.

The Public Library Association of Nevada (PLAN) was formed in 1962. Mrs. Dora Witt was its first chairperson. Its purpose also was the promotion and fostering of the development of public libraries in Nevada and the implementation of the ALA's *Interim Standards for Small Public Libraries and Public Library Service*, and the achievement of the plans for public library development outlined in their publication, *Public Library Development in Nevada—A Plan*, 1964.

The Public Library Association of Nevada and the Nevada Association of Library Trustees were merged into one section of the Nevada Library Association

in 1971; this section is named Public Library Association of Nevada/Nevada Association of Library Trustees (PLAN/NALT). Its charge is to foster and promote public library services in Nevada.

The Academic and Special Libraries Section (ASLS) of the association was formed in 1967; its by-laws were approved by the NLA Board of Trustees in 1968; Mr. Martin Dickstein was its first chairperson. This section changed its name in 1974 to Nevada College and Research Libraries (NCRL). The stated purpose of the section is to promote library service of the highest quality for all present and potential users of academic and special libraries in Nevada. The section has been working for several years on a directory of the libraries in the state: public, school, academic, and special, which will list each library's special strengths and interlibrary loan conditions as well as the usual hours, location, etc. In 1975, the directory, *Information Resources of Nevada* (IRON) was published and distributed to libraries within the state.

In 1973 the fourth section of the Nevada Library Association was formed: the Children's Services Section, with Mrs. Nancy Cummings as its first chairperson. The primary goal of the section is to promote the continuous growth and improvement of library service for all young people in Nevada. Fifth and sixth sections of the Nevada Library Association were formally approved in 1975; they are the Media Section and the Section on Underserved Populations.

Among the most active of the standing committees of the Nevada Library Association in the early years was the Certification Committee, which establishes policy for and administers the certification of Nevada librarians. This voluntary program for certification was started in the 1950s by the entire association. Its policy gradually changed to focus on certification for public librarians during the 1960s and it became a functioning committee of the Public Library Association of Nevada in the early 1970s. The Constitution and By-laws Committee, the Government Relations Committee (which combines what were formerly the State Legislation, State Legislative Action, and Federal Relations Committees), the Intellectual Freedom Committee, the Membership Committee, and the Library Services Committee are the standing committees. The Intellectual Freedom Committee was organized during the 1962 convention in Reno, Nevada. David Heron, at that time Director of Libraries at University of Nevada, Reno was its first chairperson. The policy statement of the committee was endorsed and adopted by the membership of the Nevada Library Association in 1968, and again in 1970–71 when the policy statement was expanded. The Intellectual Freedom Committee has sponsored booths at the Nevada State Fairs and at the Nevada Library Association conventions; it worked and works very closely with the Government Relations Committee when censorship and obscenity bills come before the state legislature. The two committees working together, with backing from the entire association, succeeded in changing an amendment to the criminal obscenity statute which removed libraries from likelihood of censorship. They are now preparing for the next legislative session when the statutes must be changed again due to the Supreme Court's latest decision on obscenity. The Library Resources and Develop-

ment Committee has undergone various name changes during the years; it is now
the Library Services Committee and is responsible for both short- and long-range
planning to achieve the purposes and goals of the association. Its membership must
include representation for all types of libraries within the state, reflect geographical
considerations, and its terms of membership are overlapping, for continuity of
planning. This committee was responsible for the first plans for a statewide library
information network and for a state grants-in-aid program. The state grants-in-aid
concept was first presented to the state legislature in 1965; it was unsuccessful until
the 1973–1975 biennial legislature session when monies were placed in the budget
of the State Library as a line item in the governor's budget for "library develop-
ment." The Nevada Council on Libraries developed from plans of the Library De-
velopment Committee, and from a recommendation made by Gretchen Knief
Schenk in her *Public Library Service in Nevada*. The Nevada Council on Librar-
ies, the Library Services Committee, and the Government Relations Committee
of the Nevada Library Association are planning a program for presentation to the
governor for his next biennial budget. The council and NLA supported the State
Library in requesting $700,000 in library development funds from the 1975–1977
biennial session of the legislature. The governor's budget recommendation to the
legislature requested $301,100, which was the sum appropriated.

The Nevada Council on Libraries became a statutory body in 1965. Its re-
sponsibilities are to examine and overview the whole state of libraries, librarianship,
library education, library resources, and all allied and cognate activities and prepare
a record of its findings; require public libraries to provide necessary library statistics
and reports; and to make recommendations for the advancement of libraries. In
1971 the Nevada Council on Libraries was augmented by the Nevada State Ad-
visory Council on Libraries, which had been formed as required by the Library
Services and Construction Act (LSCA) to overview the distribution of federal
monies. The membership of the council is appointed by the governor from a list
of names supplied by the Nevada Library Association. Two of the members are
working librarians, two are trustees of legally established libraries or library systems,
two are active and interested laymen, and the final member of the council is the
state librarian; each member must be a member in good standing of the Nevada
Library Association and the American Library Association. One of the first actions
of the council was to act upon a recommendation of the Nevada Library Association
for a statewide survey of library resources, facilities, and services and to publish the
findings of the survey and make recommendations to the governor and legislature,
in cooperation with the Nevada Library Association and other organizations and
agencies responsible for library services to the residents of Nevada. A grant of
$21,200 was obtained from the Max C. Fleischmann Foundation to defray the
costs of the survey, which resulted in publication of four survey reports covering:
public libraries; services to the institutionalized; services to the physically handi-
capped; and archival, library, and museum services then current.

The Nevada Library Association has held an annual convention/meeting since
1946. The meeting is usually held sometime in October, although in earlier years

the meetings were held in the spring. The first meeting was attended by some 30 librarians, the second by 54 members and five exhibitors; in later years the meetings have been attended by some 200 members of the association and 62 exhibitors. The meeting site changes each year, from the larger cities to the smaller towns and from north to south, east to west. In 1967 NLA held a joint convention with the Nevada Educational Media Association which attracted well over 200 people and the above-mentioned 62 exhibitors of all types of media and media equipment.

The association has from its beginnings worked for the strengthening of the State Library and its functions. The resolutions of the first convention were: first, to secure the introduction and passage by the state legislature of adequate library laws; second, help strengthen the State Library. At the first convention, the board of trustees voted to affiliate with the American Library Association, and during the 1958 convention the Nevada Library Association joined the Mountain–Plains Library Association, an eight-state regional association of libraries and librarians which includes the following states: Colorado, Kansas, Nebraska, North and South Dakota, Utah, Wyoming, and Nevada. The 1958 convention was the first one to hold special meetings reflecting the interests of sections. The 1958 convention proved that the Nevada Library Association was strong enough to form special interest sections. The annual conventions/meetings reflect the year-to-year goals of the association as well as the plans for future goals that are 5, 10, or even 20 years away from their successful attainment.

The legislative efforts of the Nevada Library Association, especially in regard to permissive library legislation, have been almost uniformly successful, although not always at the first request. Since 1946 the Nevada Library Association has been directly connected with every piece of library legislation passed by the state legislature. During these years the following laws were passed for the improvement of libraries in Nevada:

> The state librarian shall be a graduate of a library school accredited by the American Library Association.
>
> The powers and duties of the office of state librarian were expanded and strengthened. Four of the most important new powers of the office were the power to enter into agreements with other libraries or library districts in the state for the improvement of library service; and to render, at his discretion, financial assistance to regional, county, city, or town free public libraries; and to render, at his discretion, technical assistance to any library seeking such assistance; and the state librarian was authorized to accept and direct the disbursement of funds appropriated by any act of Congress and apportioned to the state for library purposes.
>
> The Nevada Council on Libraries was legally empowered to foster the improvement of library services.

In 1956 the joint efforts of the Nevada Library Association and the Nevada Teachers Association were successful in obtaining a state law stating that the board of trustees of a school district shall expend for library books at least $1.00 for

each child each year, with a minimum of $10.00 for any school. Inadequate even then, but more than most of the state's schools had had before. In 1972—with the endorsement of the Nevada Library Association, acting upon the request of the Nevada Association of School Librarians—an increase of this $1.00 mimimum was asked for from the state legislature but it was defeated. The school librarians wanted an increase of the $1.00 minimum to a $10.00 minimum.

The law relating to the dispersal of library gift funds was expanded to allow such funds to be used for capital improvements. New laws were made to allow county libraries to extend their services by contracting with counties, cities, towns, and school districts without library service; a new law allowed the formation of regional libraries and made provision for their funding. The library trustee law was changed to provide for limited terms of office rather than lifetime appointments, and the members of boards are now appointed by the governing body of the county or city concerned. In other legislative actions, the office of State Archivist was established legally as a division of the Secretary of State, and the establishment of county library districts by petition of the residents of a county and provision for the funding of that county library district was added to the Nevada statutes in 1967. In 1969 the Nevada Center for Cooperative Library Services was started and funded with LSCA Title III funds until 1973, when the center became a part of the State Library. A State Publications Distribution Center was passed into law in 1971 and certain state and local government publications are now distributed to designated depository libraries. In 1972 library development monies, i.e., state grants-in-aid, were granted in the budget of the State Library even though not passed as the legislative bill sponsored by the Nevada Library Association before each biennial session since 1965.

An ad hoc committee on the reorganization of the Nevada Library Association to study the goals, objectives, methods, and the structure of the association was enlarged by the President, Billie M. Polson, in 1971, at the suggestion of Dr. Lawrence Allen, guest speaker at the 1971 convention: An earlier and smaller committee on constitutional revision had been appointed by the previous President, Mrs. Elizabeth Johnson, in 1969. The ad hoc committee of 10 members was to appoint a 25-member task force which would divide into five subcommittees, each subcommittee to have a specific area of concern and the original 10-member ad hoc committee to coordinate and advise. The five subcommittees were: By-laws and Constitution, Manpower, Library Resources, Finance, and Library Development. The By-laws and Constitution subcommittee completely rewrote the constitution and by-laws and merged the old and the new into a single document of *By-laws* adopted by the association in 1972. The subcommittees on manpower, resources, and finance made recommendations for changes in the structure of the association which were also accepted by the membership and adopted at the 1972 convention. The Library Development subcommittee was found to be such a duplication of the already existing Library Services Committee that it was phased out.

The Nevada Library Association has requested or sponsored five library surveys since 1946. Edwin Castagna, chairman of the association's Legislative

Committee, compiled the first library survey, *Public Library Service for All Nevadans; the Regional Library Idea a Solution for Nevada's Needs,* in 1948. The regional library recommended in this survey became possible in 1959 when the state legislature passed the regional library permissive legislation and provided for its funding. In 1950, the Nevada Library Association's Committee on Library Resources and Development asked the American Association of University Women, Nevada Branch, to conduct a survey for them. The result of the survey was a recommendation that strengthening the State Library would be the most feasible method of improving library services in the state. The Nevada Legislative Council Bureau researched needed library legislation at the request of the Nevada Library Association and presented its report titled, *Legislation Toward Effective Library and Related Services for the People of Nevada,* its Bulletin No. 25, 1952 to the 1953–1955 legislative session. In 1958, Gretchen Knief Schenk wrote *Public Library Service in Nevada,* a survey with recommendations, more familiarly known as the "Schenk Report," which reinforced the recommendations of earlier surveys and added a recommendation for the establishment of a legally established board or council which would oversee library services and their development, not as a governing body, but as an advisory body which would report directly to the governor and to the state legislature. The Nevada Council on Libraries was established in 1965: One of the first decisions it made was the financing of the most elaborate survey to date, with the aid of a grant from the Fleischmann Foundation. Dr. A. Spencer Hill compiled the material in one of the four surveys requested by the council, titled *A Survey of Nevada Libraries,* published in 1967. One of the recommendations of this survey concerned the establishment of a library information network for the state. The Nevada Library Association Library Development Committee supplied information about the need for such a network and developed a plan for its implementation—the network plan is now in the process of implementation with funding from the State Library-budgeted "library development" funds and with released federal funds.

In a report to the governor in 1972, made by a special committee appointed by the governor to suggest methods of economizing in state bureaus and departments, it was seriously suggested that the State Library be abolished as a unified entity and its functions be distributed among other departments, i.e., the state Department of Education. The Nevada Library Association was successful in aiding the State Library in efforts to retain the State Library as a unified entity; and adding the Nevada Center for Cooperative Library Services, the technical services center established in 1961 with LSCA Title III funds, as a division of the State Library with increased state funds for its operation provided in the State Library's budget.

Future plans of the Nevada Library Association are concerned with the further expansion of the network system, increased state funding for library development, and the passing of state-funded grants-in-aid legislation rather than the governor's variable budgetary line item for "library development funds." Plans for a joint preconference with the California Library Association before their 1974 convention were discussed by President Jack Gardiner of NLA and President Nadine Greenup

of CLA and a fruitful joint preconference meeting was held. One of the results of the preconference was the opportunity for Nevada and California librarians to join the other association at a reduced membership fee. The association is also working on plans for workshops and training programs for library personnel in connection with the University of Nevada, Reno, the University of Nevada, Las Vegas, the Nevada State Library, and Western Interstate Commission on Higher Education (WICHE).

In common with most of the western states, Nevada has vast distances and a sparse population base located mainly in two urban areas of the state, Reno and Las Vegas, two conditions which do not help libraries, which are usually low on the budget priority; but as the Nevada Library Association has grown during the past 28 years so have library services in Nevada. Of course, the association has not been the only factor in the improvement of library services within the state, as the people of the state and the individual librarian must be the motivating factor, but the Nevada Library Association has proved the validity of the reasons given for its establishment: It has acted and will continue to act as a clearing house for library information in Nevada, through meetings and a published newsletter. The published newsletter has undergone four title changes throughout its 28 years of publication, two changes in format, and several editors, but is still a vital source of library information. The Nevada Library Association has acted and will continue to act as a forum for presenting new ideas to benefit Nevada libraries; and the Nevada Library Association has acted and will continue to act as a group to protect or broaden the scope of Nevada library service and call attention to the work of Nevada's libraries.

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<div align="right">BILLIE MAE POLSON</div>

NEW ENGLAND DEPOSIT LIBRARY

The New England Deposit Library (NEDL) is a cooperative storage facility for the housing of little-used library materials. It is a nonprofit corporation chartered by the General Court of Massachusetts, with membership open to libraries of nonprofit institutions. It was authorized by the Commonwealth of Massachusetts on May 5, 1941 and incorporated on June 16, 1941. Its building, at 135 Western Avenue, is in the Allston section of Boston (Massachusetts 02134). The building was designed by the Boston firm of Coolidge Shepley Bulfinch and Abbott (now Shepley Bulfinch Richardson and Abbott) and was constructed between August 1941 and February 1942; it was officially opened on March 2, 1942. The original participating institutions were the Massachusetts State Library, the Boston Public Library, the Boston Athenaeum, the Massachusetts Historical Society, Boston College, Boston University, Harvard University Library, and the Massachusetts Institute of Technology. These were soon joined by Radcliffe College, Simmons College, Tufts University, and the Boston Medical Library. Through the years other institutions have rented space in the NEDL, among them the Andover–Harvard Theological Library and the Boston Society of Natural History. Some institutions have withdrawn from membership in NEDL, such as Boston University, which withdrew upon the completion of larger quarters for its main libraries, and Simmons College. In 1976 the membership comprised the Massachusetts State Library, Boston Public Library, the Boston Athenaeum, the Massachusetts Historical Society, Boston College, Harvard University Library, Massachusetts Institute of Technology, Tufts University, and Radcliffe College.

One of the earliest proponents of a storage library for little-used collections was President Charles William Eliot of Harvard University. The need for more space to hold the growing collection of books within the Harvard College Library had been oft-reiterated throughout the second half of the 19th century by Librarians John Langdon Sibley (1856–1877) and Justin Winsor (1877–1897). This had resulted not in a new building to replace Gore Hall, which was built in 1841, but in several additions to it. Eliot, in his annual report for 1885/86, commented on the relatively small proportion of books for which there was recorded use that year. In his report for 1898/99, he stated in general terms how the problem of storage might be solved; the president called for "some means of dividing the books that are used from those that are not used, and for a more compact mode than the iron stacks supply of storing the books that are not used." The following year William Coolidge Lane, the librarian of Harvard College, responded in his annual report for 1899/1900 by stating "what the Library once receives and incorporates into its collection, that it becomes responsible for, and should preserve for future reference." President Eliot pursued this concept in an address to the Massachusetts Library Club in April of 1902, which was summarized in *Library Journal* under the title "Living Books and Dead" and again in June of 1902 at an address before the American Library Association, meeting in Magnolia, Massachusetts, entitled "The

Division of a Library into Books in Use, and Books Not in Use, with Different Storage Methods for the Two Classes of Books."

Unfortunately, Eliot's use of the term "dead book" aroused heated controversy and much debate, among scholars and librarians alike, concerning whether any title could be considered "dead." These arguments confused the issue, which was the storage of little-used material. Although the matter continued to be discussed in the abstract, it became a non-issue at Harvard with the planning and construction of the spacious, new Harry Elkins Widener Memorial Library, which opened in 1915.

Similar discussion concerning the storage of little-used material occurred among libraries in Providence, Rhode Island, in the mid-1920s, and in the Middle West in the early 1930s. However, no tangible results from any of these discussions concerning cooperative storage came about until the founding of the New England Deposit Library.

When Keyes DeWitt Metcalf came to Harvard in 1937 as director of the university library and librarian of Harvard College, the library was once again facing a critical shortage of space. In his annual report for 1939/40, Metcalf proposed a four-point plan to provide needed space for the central research collections. This called for a separate rare books and manuscripts library, an undergraduate library, underground bookstacks adjacent to Widener in the Harvard Yard, and a cooperative storage building for the housing of less-used material still deemed to have research value. The removal of these functions from the central Widener Library would then free space there for the growing research collections. The Houghton Library (1942) for rare books and manuscripts and the Lamont Library (1949) for undergraduates embodied two of these concepts. Two levels of bookstacks were also built under Lamont and were connected to Widener and Houghton by tunnels; this was the first step of subterranean storage which is being extended with the substantially below-grade Pusey Library, which opened in 1976. (The top level of the Pusey Library, housing staff and readers, is partially above grade to permit access to natural light.) The fourth aspect of the Metcalf proposal became the New England Deposit Library.

In 1940 a *Proposal for a Deposit Library* was circulated, and eight Boston area libraries were sufficiently interested in joining. Because of the possible legal complications in securing tax exemption and in receiving appropriations from tax-supported institutions, an enabling act was submitted to the Massachusetts state legislature incorporating the New England Deposit Library as a separate, nonprofit corporation. This was signed into law on May 5, 1941 and is recorded in the *Acts of 1941*, chapter 240. In this law the requirements for membership in the NEDL were made explicit: storage privileges could be rented by any library operated by the United States; by the Commonwealth of Massachusetts or by any other state; by any city or town; by any subdivision board or agency of the commonwealth or any other nonprofit institution; or by any literary, educational, scientific, charitable, or religious society, corporation, association, or trust, if admitted to the New England Deposit Library by the governing board.

With the enabling legislation passed, the New England Deposit Library was incorporated on June 16, 1941; this date was also that of the first meeting of the governing board, which voted upon and accepted the bylaws. The original members of the corporation were Dennis A. Dooley, Massachusetts State Librarian; Milton E. Lord, Director of the Boston Public Library; Elinor Gregory, Librarian of the Boston Athenaeum; Allan B. Forbes, Librarian of the Massachusetts Historical Society; William J. Murphy, S.J., President of Boston College; Daniel L. Marsh, President of Boston University; Keyes D. Metcalf, Director of the Harvard University Library; and William N. Seaver, Librarian of the Massachusetts Institute of Technology. As can be seen above, the corporation is not an association of libraries but of representatives from the participating institutions and their respective successors.

One of the first acts of the governing board was to petition Harvard to erect a building for it, with the understanding that the Deposit Library would buy the building through a mortgage to be issued by Harvard at a low rate of interest. The firm of Coolidge Shepley Bulfinch and Abbott designed the building, and construction was begun on land donated by Harvard. Construction began in August of 1941 and was completed in February of 1942. Its total cost, including fees and furniture, came to $212,909.54; this was approximately $5.60 per square foot. On December 16, 1941, Harvard granted a mortgage of $215,000 (down from an original request of $250,000), to be paid off in 40 years with an annual interest of $2\frac{1}{2}\%$. In fact, the mortgage was paid off on December 31, 1957. This was possible for two reasons. First, temporary war-time tenants filled the building almost immediately after construction, and were charged a suitable rental; these included the Victory Book Campaign, the Red Cross, several area museums which stored art objects, and the Department of the Navy. Secondly, the rate of payment on the mortgage was determined by a schedule assuming that the library would be 75% occupied. Almost immediately after the war-time renters left, participating libraries filled the building, which allowed the New England Deposit Library more income than anticipated, and thus the ability to pay off the mortgage quickly.

The amount of rent to charge was also determined by a formula which took into account the moneys necessary to pay the mortgage and operate the library, the amount of space expected to be rented, and the provision of a slight surplus in the event of emergency or for the construction of a future addition. Rental was set at $5.50 per annum for a single-faced section of book shelving, 3 feet wide and 8 feet, 4 inches tall: each eight-section, single-faced range of book shelving was then rounded up to $50 a year. For newspaper shelving, each 2½-foot-wide section was to be rented at $7, with an 11-section, double-faced range at $150. Thus a balance was achieved whereby three double-faced book ranges rented at $300 a year, roughly equivalent to the floor space of two double-faced, but deeper, newspaper ranges, also renting at $300 a year. A full stack floor was set at $4,500 a year, and the minimum to be charged to a participating library, regardless of rental, was set at $250 a year. These rates were still in effect in 1976. It was calculated that the capacity of the building was roughly 3,500 book sections and 1,000 newspaper

sections, producing an annual income of $26,250. Similarly, based on six floors at $4,500 a floor, potential income would be $27,000. In fact, the rental income for 1975 was $27,185.50.

The land on which the building was constructed is a parcel of 50,000 square feet, measuring 250 feet by 200 feet. The building is a simple brick structure of two parts. The larger, rear section is an oblong box measuring 64 by 88 feet; it has a basement, half of which is above ground, and five upper levels, making six stack levels in all. It is a highly efficient bookstack, with one center aisle and all stack aisles dead-ending at the outside wall. Because of the scarcity of steel due to the war, only the lowest floor has easily adjustable steel shelving; the rest of the stacks are of wood bolted together. Although this makes for less flexibility, the wooden stacks were constructed with an eye to shelving the books by size, and this has increased the efficiency of the structure. The front section of the building is a basement and a first floor, each measuring 25 by 93 feet; it contains a workroom and mechanical space in the basement; and a receiving room, lavatories, and a reading room seating 20 readers on the first floor. Plans were made so that five more stack units, each equal in size to the original one, can be built as needed on either side and in the rear. Although the question of constructing an addition has been raised from time to time, it appears that this will be unlikely in the near future.

Each cooperating library has been responsible for its own collections in the Deposit Library. Although there were some discussions concerning transferring ownership of holdings to the Deposit Library and removal of duplicate titles— especially long runs of periodicals and newspapers—from one library's deposit if those titles were in another library's deposit, this never occurred. Among the problems associated with this was the question of how the Deposit Library would charge itself rent if it indeed took possession of titles. Similarly, there were also discussions concerning a union catalog of collections deposited by the participating libraries, but this never came to be. Bibliographic access to the collections on deposit is had through the individual member libraries. Although it was the hope of some of the original founders, the New England Deposit Library never developed into the kind of cooperative institution that the Center for Research Libraries in Chicago became.

The matters of which collections to put on deposit and how they were to be arranged was left up to each individual participant. Again, this led to a lack of uniformity. However, some generalizations can be made. Many participants sent over entire sections of their classification schemes in cases where sections were considered little-used. Harvard's transfers included *Cyc* (encyclopedias), *Juv* (juvenile literature), *Reg* (registers), *Dir* (directories), and *Educ T* (textbooks). The state library transferred duplicate, back-up sets of state documents. Given the disparate nature of the participating libraries, what might be little-used at one library may be in greater demand at another. It is therefore difficult to generalize about the nature of the collections deposited.

Most libraries, however, elected to shelve their collections by size. This was a

more efficient method of storage and also meant a savings in processing cost, since the titles were not to be classified but shelved by accession number within each size category. Alphabetical letters were used to indicate the size, preceded by letters indicating the institution. (Harvard chose K as its prefix since this was a letter not used in Widener's unique classification system.) Thus, KC 321 indicated a Widener title (K) not more than 6⅞ inches high (C), which was the 321st title added. TUD 876 indicated a Tufts University title (TU) over 6⅞-inches but not more than 7⅞ inches high (D), which was its 876th title added. The complete size class marks used by Harvard are:

KC	Up to and including 6⅞ in.
KD	Over 6⅞ and up to 7⅞ in.
KE	Over 7⅞ and up to 8⅞ in.
KF	Over 8⅞ and up to 9⅞ in.
KG	Over 9⅞ and up to 11⅞ in.
KH	Over 11⅞ and up to 13⅞ in.
KJ	Over 13⅞ and up to 19 in.
KN	Newspapers and books over 19 in.
KPC–KPJ	Poor paper, etc.
KSC–KSJ	Incomplete serials

In this more compact method of storage, it has been estimated that the Deposit Library can contain approximately 1,000,000 volumes at an average of almost 30 volumes per square foot of stack. This is not only efficient storage, but economical as well. Harvard rents space for almost 300,000 volumes, and pays an annual rental of just under $10,600; this comes to 3.6¢ a volume.

The success of the New England Deposit Library lies in its function as an economical way to store little-used materials still deemed to have research value to the member libraries. It was also a pioneering effort in interinstitutional library cooperation. There have been, and will continue to be, other more comprehensive and far-reaching cooperative activities among libraries in the storage and lending of unique and/or little-used materials. But the New England Deposit Library still functions as originally intended, and has a definite place in library history.

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NEW ENGLAND DOCUMENT CONSERVATION CENTER

Because the desire for the services provided by libraries transcends governmental boundaries and can most effectively be satisfied by giving such services to communities and people regardless of jurisdictional lines, it is the policy of the states party to this compact to cooperate and share their responsibilities; to authorize cooperation and sharing with respect to those types of library facilities and services which can be more economically or efficiently developed and maintained on a cooperative basis, and to authorize cooperation and sharing among localities, states and others in providing joint or cooperative library services in areas where the distribution of population or of existing and potential library resources make the provision of library service on an interstate basis the most effective way of providing adequate and efficient service (Article 1, Interstate Library Compact).*

The first regional cooperative restoration center for library and archival materials in the United States, the New England Document Conservation Center, was established by librarians (the New England Library Board under their authority in the Interstate Library Compact) for the benefit of libraries in general, and not by scientists, practicing conservators, or commercially motivated interests to "sell"

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* The laws of the six New England states establishing the Interstate Library Compact are: Maine Rev. Stats. 27 Sec. 141–152; New Hampshire Rev. Stats. Anno. 201-B Sec. 1–6; Vermont Stats. Anno. T22, Sec. 21–32; Massachusetts Anno. Laws 1963 C. 693; Rhode Island General Laws 29-5, Sec. 1–6; and Connecticut Gen. Stats. 11–38–11–43.

their services to those in need of them. This is a milestone and the story behind it is worth repeating, because the library profession is, after long neglecting this vitally important aspect of library management, giving it the attention it deserves.

At the meeting of the American Institute for Conservation in Kansas City, May 1973, John Spencer, director of museum programs, National Endowment for the Arts, stated that there is a requirement for 15 or more regional restoration centers in the United States to meet the need he knows to exist. This awareness of the importance of the physical care of materials also recognizes that measures so far have been inadequate. For many years scientists in public and private research facilities have been investigating the problem of decay of library materials, and the causes for deterioration are now generally understood. Scientifically sound measures are now available for the prevention of damage as well as for restorations after damage has taken place. However, it cannot be claimed today that the situation is under control or even that the alarming loss of the artifacts and records which are our heritage has been moderated. If anything, particularly in the case of library and archival materials, we are losing ground because of the awesome number of books and other records produced annually which are doomed from the beginning because of the inferior materials with which they are made and the environmental conditions in which they will be kept.

The magnitude of the problem and the costs involved cause some administrators to wonder if the matter can ever be resolved. Although 10 years ago we were faced with the dire prediction that 90% of the books printed since the beginning of the 20th century would inevitably be lost because of physical and chemical decay, the situation has changed because librarians now are beginning to recognize their responsibility in these matters and cooperate with scientists and practicing conservators in the search for solutions.

The Council on Library Resources has been encouraging librarians to take more interest in the physical care of their collections and has been financially supporting the American Library Association's Library Technology Program, the work of the W. J. Barrow Research Laboratory, Inc., and other programs designed to further the preservation of library and archival materials. Mr. Howard Winger, in *Deterioration and Preservation of Library Materials* [University of Chicago Press, 1970 (the proceedings of the 1969 meeting in Chicago)], summarized the situation very well when he wrote:

> These developments have inspired librarians to undertake programs of study, research and action about problems of the deterioration and preservation of library materials. They have also helped foster a community of interest and inquiry among others involved in the production and preservation of library materials. Paper makers, publishers, printers, binders, suppliers of photographic materials, environmental scientists, conservators and others have pursued or continue to pursue their own investigations. Study is proceeding on many of the most pressing problems of preservation.

In the awakening recognition of the magnitude of the problem and the urgent need for solutions these facts are recognized:

1. Cooperation is the key to the solution in such matters.
2. Teaching and training is a major requirement for conservation administrators as well as practicing conservators.
3. Conservation is expensive.
4. Centralization and coordination can help contain the expense of conservation.

These four facts are the basis for the development of the regional cooperative approach to conservation in the United States. Science is developing techniques for successfully treating damage, and practicing conservators, few as they are, are proficient in the application of these techniques. Unfortunately, the equipment and skills necessary for this work are expensive and their cost precludes the establishment of conservation workshops even in some of the largest libraries. The rationale, therefore, of cooperative library conservation is to establish strategically located, professionally operated, fully equipped restoration centers to make available to all, at minimum cost, the highest quality repairs and restorations; training opportunities for conservation technicians; teaching facilities for the benefit of administrators and conservators; and paper laboratory and microreproduction facilities; all to encourage total conservation programs in the libraries, archives, public record depositories, and historical societies in a specified area.

In 1965 the Library of the Boston Athenaeum, borrowing on the experience of the Intermuseum Conservation Association, Oberlin, Ohio (ICA), proposed the establishment of a Cooperative Library Conservation Association for New England and requested support for this idea from the New England Deposit Library (NEDL), an organization with membership consisting of 10 major libraries in the Greater Boston area. Meeting in January 1966, the trustees of NEDL agreed the idea had merit, but excused themselves from participation because in their opinion the idea "did not fall within the scope of their charter." However, the idea was kept alive by the Boston Athenaeum's director and his chief conservator, both of whom took advantage of every opportunity to speak and write on the subject. At a meeting of concerned records officers from five of the six New England states in 1969, one of the agenda topics was the difficulty and expense involved in arranging for the repair of original documents. The consensus was that there is enough work to be done to justify the establishment of a restoration laboratory in that part of the country and that acting together the New England states might well support such a project.

The administrators of the New England Interstate Library Compact (now known as the New England Library Board), when apprised of the situation in December 1970, resolved to establish a conservation center ". . . to make available to public libraries, state and local archival agencies and other nonprofit historical, educational and cultural institutions on a cooperative basis the means for preserving, repairing and restoring important or unique documentary materials." Documentary materials in this sense include, in addition to essential state and local records: books, prints, maps, manuscripts, broadsides, and works of art on paper in the collections of libraries, archives, historical societies, and museums. In January 1971 the compact's administrators submitted a proposal to the Council on Library Resources for assistance in the establishment of a conservation center

patterned after that one proposed to the New England Deposit Library by the Boston Athenaeum in 1965. In November 1972 the council approved a grant, thus enabling the New England Library Board to proceed in that direction by the establishment on April 1, 1973 of the New England Document Conservation Center. Policy guidance for this activity, authorized by the terms of a library agreement among the states and approved by the attorney general of each state, is vested in the New England Library Board, who also appoint a director charged with the operation of the center.

The objective of the center is to administer and supervise a workshop, necessary facilities, and staff to restore, preserve, and maintain the physical condition of books, prints, maps, broadsides, manuscripts, and similar documentary materials of historic, archival, or cultural interest; and when necessary for the accomplishment of this objective, the center will investigate materials and equipment and conduct studies and tests in order to develop methods to protect, preserve, and maintain the integrity or improve the physical condition of such documentary materials, assist member institutions to carry out conservation programs, and render conservation services to them.

The educational function of the center, completely separate and financially independent of the repair and restoration function, is to provide education and training opportunities and facilities for the benefit of librarians, archivists, practicing conservators, technicians and students interested in qualifying as conservators, and librarians and archivists seeking competence in conservation. The center's director of education devotes his time toward the accomplishment of these goals. The center, at the request of the Graduate School of Library Science at the University of Rhode Island, annually presents an on-campus course for credit toward a master's degree in library science on the management aspects of conservation. The center is also collaborating with the Boston University/Franklin Institute Program in Artisanry in the preparation of undergraduate and graduate courses in conservation for the library profession in the northeastern United States.

Funds required for the establishment of the center were provided by direct grants from the New England states, foundation grants, and private contributions to match the money provided by the Council on Library Resources to underwrite this pilot program to investigate the feasibility of the cooperative approach to conservation. The 2-year trial program has been highly successful and the center is now fully self-supporting on a firm financial basis. The Conservation Center is located in the Merrimack Valley Textile Museum, North Andover, Massachusetts and—with its preservation workshops, teaching and training facilities and field services, and staff of experts—is the first of its kind anywhere. Librarians, archivists, museum staffs, historical society personnel, and public records administrators in New York as well as the New England states find in it practical solutions for their repair and restoration requirements, guidance in preventive conservation, assistance in emergencies, training of technicians, and staff education in the management aspects of conservation.

GEORGE MARTIN CUNHA

NEW ENGLAND HISTORIC GENEALOGICAL SOCIETY

The New England Historic Genealogical Society in Boston was incorporated in 1845 by an act of the Massachusetts General Court, and its objective is "to collect, preserve, and publish historical, biographical, and genealogical data, and, through its library and its publications, to make such records available to members and the public" (*1*). In 1847 it began to publish the *New England Historical and Genealogical Register,* for well over a century the most significant and most scholarly of American genealogical periodicals.

Although the society has a substantial membership of over 3,000 and a fairly respectable endowment (hazardous to estimate market value in inflationary times, but probably well over $1,000,000), it has always depended quite heavily on volunteer work of retired members and the loyalty of a small and underpaid staff. Thus in 1951 the society was able to secure the services of Arthur Adams, retired librarian of Trinity College, Hartford, Connecticut, as librarian and editor of the *Register;* and upon his retirement in 1959, it was possible to replace him as editor with another former academic librarian, Gilbert H. Doane, long-time director of the University of Wisconsin Library.

The collections run to well over 200,000 volumes, and if all pamphlets and supplementary material (counted as bibliographical units in statistics of many a research library) were included, the figure would be higher. Qualitatively, the collections are not duplicated anywhere in the United States, although, of course, those of the Genealogical Society in Salt Lake City (*q.v.*) are considerably larger. The bibliographical record in the *Register,* recording virtually all important new material in the field, reflects something of the value of the society's holdings.

The membership fee, always quite modest, gives access to the bookstacks and, much more important for nonresident members, the privilege of borrowing books by mail. The library itself is properly to be considered as a part of a network of highly significant depositories of historical source material. Thus the proximity of the Massachusetts Archives in the State House, of the well-preserved files in the Suffolk County Court House, of the Massachusetts Historical Society, and of the other agencies and libraries which hold some of the most significant source materials on American history, from the period of exploration and settlement onwards, lends a special role to the society as the special collection in the field of genealogy.

It cannot be too strongly emphasized that the society is essentially national rather than regional, as its name implies. Its collections in its chosen field are unrivaled, either by historical and other special libraries or by libraries such as the Library of Congress and the New York Public Library, which are especially strong in local history and genealogy. In over a century and a quarter of its existence, the society has placed a strong emphasis on service to serious scholars and earnest researchers alike through the provision of direct access to its collections, in Boston or anywhere else.

REFERENCE

1. Whitehill, p. 31, says that the society was organized by men who were annoyed that they were not elected to the exclusive Massachusetts Historical Society.

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LAWRENCE S. THOMPSON

NEW ENGLAND LIBRARY ASSOCIATION

The New England Library Association (NELA) provides a regional focus for the impetus which came historically from the state library associations of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, with cooperation from more specialized library associations in the region. Besides a continuing close relationship with the state associations, NELA has developed a number of sections representing types of libraries as well as types of activities. There are currently ten: Audio-Visual Section, Catholic Library Section, Hospital Librarians of New England, New England College Librarians, New England Outreach Network, New England Technical Services Librarians, Round Table of Children's Librarians, Round Table of Librarians for Young Adults, School Library Section, and State Library Services Section. Most of the sections were constituted by the specialized associations once cooperating in NELA conferences or were formed by a portion of their membership.

Standing committees of the association include Bibliography, Bylaws, Exhibits, Membership, Public Relations, Regional Planning, and Scholarship. The more formalized structure made up of sections and committees dates from 1963. NELA's earlier history was characterized by a rather informal mode which began almost 40 years ago.

In June 1938, the Regional Conference of New England State Library Associations was held at Equinox House in Manchester, Vermont. Alexander Woollcott, speaking on "Folklore," graced its kickoff session on the evening of June 20, and 2½ days of well-rounded programs followed. Having arranged a successful first conference, the presidents of the six state library associations, under the chairmanship of Mrs. Gladys Young Leslie, librarian of Bennington College, took steps to see that it should not be the last. At the business meeting they presented, and those attending accepted, a proposal to create a permanent regional library organization, with the proviso that each state library association should be encouraged to name a delegate to serve on a committee which would draw up consti-

tutional provisions toward that end. One year later, at a second Regional Conference, held at Wentworth By-the-Sea in Portsmouth, New Hampshire, the Articles of Agreement establishing the New England Library Association were approved. The date was June 22, 1939.

Originally the purpose of the association was

to plan and to hold regional conferences of librarians and trustees (or directors) of New England libraries for the exchange of ideas and the welfare of libraries through addresses, discussions and similar measures, in close cooperation with the several Library Associations of the New England states.

For almost 25 years that purpose remained essentially unchanged. Although the advent of World War II and the accompanying "uncertainties of gasoline and tire rationing, black-outs, and railroad complications due to troop movements" forced the cancellation of the next conference, planned for 1942, and extended the hiatus for the duration of the war, the association again became active in 1946, holding a conference in the fall of that year and biennially or annually thereafter. War-related activities also deprived the association of the services of its first elected president. Heller C. Wellman, librarian of the City Library, Springfield, Massachusetts, resigned because of the pressure of his duties on the Selective Service Board. By vote of the NELA Executive Board, he was replaced by Louis Felix Ranlett, librarian of the Bangor (Maine) Public Library, who had been elected treasurer.

In the early days the association was very loosely structured, maintaining no formal membership, levying no dues, and providing little assured continuity among members of the executive board. The board itself served chiefly to coordinate conference program plans of the various cooperating groups who took advantage of the new umbrella for at least one meeting a year to give their more specialized constituencies an opportunity to view diverse exhibits and to broaden their professional horizons. In addition to the six state library associations, the groups participating in the 1946 conference at the New Ocean House in Swampscott, Massachusetts, for example, were the Boston Chapter of the Special Libraries Association, the Boston Group of Catalogers and Classifiers, the Connecticut School Library Association, the New England College Librarians, the New England School Library Association, and the Round Table of Children's Librarians (which that year was celebrating its 40th anniversary).

Ties with the American Library Association (ALA) were deliberately close. The Articles of Agreement instructed that a summarized report of each conference be sent to the secretary of ALA, and NELA meetings were to be held only "when, in the opinion of the conference or the Executive Board, the Annual Conference of the American Library Association shall be held at a point too distant to attract a considerable attendance from New England." This stipulation ruled out conferences in 1940 and 1941, when ALA met in Boston and Cincinnati, but it turned out that in most postwar years NELA conferences were deemed desirable. In 1949 the ALA Regional Conference for New England was jointly sponsored by the two

associations. It was also customary to invite an officer of ALA to speak at one of the general sessions at each NELA conference, registration for which typically ranged from 700 to over 1,000. Membership in ALA was maintained then as now.

While conferences were the main concern of the New England Library Association for many years, its executive board did use the prestige of its regional representation occasionally to speak out on public issues. In October 1952, for instance, attacks by the Boston *Post* against Milton Lord and the book selection policies of the Boston Public Library prompted the board to vote unanimously to release a strong statement deploring the *Post*'s tactics. Committees unrelated to conference planning also began to appear in the 1950s with the creation of the Recruiting Committee and the Adult Education Committee. Federal and state library legislation regularly received the board's support.

The first record of a growing sentiment that NELA should become more than a vehicle for conferences is found in the minutes of the executive board meeting of January 12, 1953. Several letters to the president expressed the desire for the association to assume a more active role in library affairs of the region. Awareness of such a need had probably been the motivating factor behind the vote at the preceding meeting of October 1, authorizing a study of state laws governing incorporation. The study was conducted, a report was made at the 1953 business meeting, and the board was empowered to proceed with incorporation, but no action was actually taken for another decade.

There was a certain charm in the informality and absence of bureaucracy which characterized the association when it was, in the words of a later critic, a "chowder and marching society," and a substantial number of librarians clung to the casual ways, steadfastly resisting the call to mobilize for broader action. The movement in that direction, however, seemed inexorable. Although no basic changes in structure were made, a somewhat more flexible statement of purpose was adopted in 1954. A few years later, the secretary reporting on a November 4, 1957 executive board meeting included this unembellished sentence: "A discussion followed on the formalization of the organization of NELA." The next year a significant vote was taken at the annual business meeting, directing the president to appoint a committee "to explore the problem of regional library development for New England."

An early report of the first Regional Planning (initially called Regional Library) Committee, chaired by Donald B. Engley of Trinity College, Hartford, Connecticut, carrried the following recommendation coming out of a meeting of December 10, 1959, at which the groups usually cooperating with NELA were represented:

> The New England Library Association came into being 20 years ago as an informal annual occasion for professional communication, without dues or membership.
> It is now proposed that NELA be reconstituted as a dynamic vehicle, reflecting the interests of as many aspects of the library profession as possible to serve the regional aspirations of the six New England states as a cooperating unit. Such a change implies changes in the relationships of supporting groups and associations,

memberships and financing in terms of a continuing structure of offices and committees supported by an adequate secretariat.

At the business meeting of the 1960 annual conference, unanimous approval was voted the Regional Planning Committee's proposal "that the NELA Board take as its prime responsibility for the year 1960-61 a review of changes which should be made in its make-up to permit the Association to function as a truly regional organization." Although progress was slowed because of the need to consult with the boards of cooperating groups and to await the results of several state surveys then underway, a committee began early in 1961 to study the procedures for implementing changes in the structure of NELA. By the time of the 1962 conference, a revised constitution and set of bylaws drawn up by Theodore Johnson, David Evans, and Lois Markey, were ready for consideration. With minor amendments, they were adopted on October 4, 1962

The newly structured association was now provided with broader and more active objectives: "to promote library interests and services, to cooperate with regional and national agencies with related interests, and to stimulate research in library and related problems in the region." It also had a formal dues schedule, a provision for the establishment of sections, an advisory council to be made up of representatives of sections and state library associations and authorization for an executive secretary. In the first year under the new bylaws, the association attracted 900 members.

The question of incorporation was raised again in November 1962, and this time the executive board moved expeditiously. On January 18 1963, the articles of incorporation in the Commonwealth of Massachusetts were signed. By that date, a part-time Executive Secretary, Mrs. Margaret Mataraza, had also been appointed.

What proved to be the weakness of the new bylaws was the nonspecificity of the article relating to sections, which could be established by petition of 10 members of the association. Even though this article was early interpreted as requiring subsequent section members also to be NELA members, the requisite was implied rather than clearly stated. When the groups which had formerly "cooperated" with NELA began, as most of them did, to petition for section status, therefore, they often contributed only token membership (and thus funds) to the "parent" association. Several of the associations which predated NELA felt that it was inappropriate to subordinate themselves to a relative latecomer, although they valued the benefits, such as low conference registration fees, which NELA membership offered.

Handicapped by a smaller membership than the overall constituency which looked to it for leadership (about half of the conference registrants each year were nonmembers), the association nevertheless adopted a regional outlook and in the next decade undertook to provide several new services o its members and to explore ways to improve library service to area residents. ome attempts were more successful than others, but as a whole the association became more action-oriented.

A New England library journal had been recommended as early as 1959 by the Regional Planning Committee. After a number of studies—by John Berry in 1964, Karl Nyren in 1966, and a Special Publications Committee headed by Barbara Holden in 1967—the board launched the bimonthly *NELA Newsletter* in January 1969, with Lee Ash as editor. It was to become quarterly in 1970, then return to its former frequency in 1973. Succeeding editors were Mrs. V. Genevieve Galick (November 1972–November 1973) and Mrs. Adelaide C. Gardner beginning March 1974. The need for a journal was acknowledged and its creation set as a goal for the future.

Efforts of the Bibliography Committee in 1968 toward planning a New England bibliography of local history led to the formation of the Committee for a New England Bibliography, Inc. NELA has contributed funds to this ongoing endeavor, and the NELA Bibliography Committee continues to maintain liaison with it. This committee has also compiled bibliographies on various subjects, chiefly for the use of school and small public libraries.

In another area, the NELA Public Relations Committee held a highly successful Public Relations Workshop in April 1969. It was the first membership activity sponsored by the association between conferences. Also a first was the membership directory which the Membership Committee compiled the same year. It has since been issued regularly. Extending beyond the membership, the association's scholarships—one of them funded by the F. J. Barnard Company (now Wesby–Barnard)—benefit two or more aspiring librarians in New England each year.

One service attempted but thwarted by legal complications was the establishment of a regional recruiting office at Simmons College in 1965, when the shortage of librarians was considered critical. The difficulty of funneling federal funds from the various states under the then recently enacted New England Interstate Library Compact forced the project to be abandoned. Another promising proposal which was shelved, partly for lack of funds but also partly perhaps because of the untimely death of its author, was that of a computer-based regional union catalog using Library of Congress card numbers. On May 1, 1964, Louis Schreiber presented to the executive board a detailed report of a preliminary study he had conducted on the preparation of such a catalog. The concept was later to be successfully implemented in Louisiana and other states, but it apparently was not pursued in New England after a progress report on it was given at the NELA business meeting in October 1965, at which Mr. Schreiber's death was regretfully noted.

The Regional Planning Committee during the 1960s considered these and many other ideas for sorey needed services which could be realized only through regional cooperation but found that the committee's necessary reliance on voluntary action by widely separated members, all with full-time responsibilities at their home institutions, made it impossible to undertake a major project. The committee did some helpful spadework, however, in producing the *Directory of Cooperative Activities in New England,* descriptions of independent cooperative arrangements already underway. I was compiled by Charles E. Funk, Jr., and published in December 1969.

Convinced that NELA could never assume the administration of a full-scale action program of interlibrary cooperation on a regional basis, the Regional Planning Committee instead conceived a vehicle expressly designed for that mission. A proposal for the creation of a New England Library Board (NELB) was presented to the NELA Executive Board on June 8, 1970. With the approval and encouragement of the executive board and with the blessing and aid of the six administrators of the New England Interstate Library Compact, which served as the legal instrument, the New England Library Board came into existence on October 6, 1972, after the attorneys general of the six states had reviewed its bylaws. In signing the bylaws, the heads of the six state library agencies assumed a new entity as the Board, while retaining their former roles as Compact administrators.

Possibly the most significant product of NELA effort to date, the NELB is intended to coordinate programs for improved library services to the citizens of New England through effective utilization of the region's diverse information resources. By means of a secretariat headed by an executive director (appointed to begin September 1974) and advised by a broadly representative Panel of Counsellors (including the NELA president ex officio), NELB is charged with stimulating collaboration among library institutions and agencies of all types. Original funding, chiefly by state library agencies and library associations—NELA among them— is expected to be supplemented in the future by federal and private grants. NELA also cosponsored in September 1974 an "Idea Conference" at which representatives of multistate groups discussed types of cooperative programs which NELB might promote.

In its desire to give better service to its members, NELA itself continued to be hampered by the lack of cohesion among its sections. To try to solve the association's organizational weaknesses, an Ad Hoc Committee on New Directions for NELA was appointed in February 1970. After much soul searching, long study, and sometimes spirited debate, members voted at the 1972 conference to revise the bylaws, as recommended by the New Directions Committee, by spelling out the prerequisite of NELA membership for all section members, at the same time giving section and state association representatives on the council the privilege of a vote and regular attendance at executive board meetings.

Much of the association's time in the ensuing 2 years was unavoidably taken up with internal adjustments. Each section reviewed its relationship with NELA. Some met the basic requirement of section status. A few which did not, for example, the Law Library Section and the New England Library Trustees Association, withdrew. Others which did not meet the requirements formed new sections apart from the older groups. The full impact of the changed relationships will be realized only after several more years pass.

In 1975 NELA membership reached an all-time high of 1,317. Another 340 attended the NELA conference as nonmembers that year. If it is to be able to offer additional membership services which are increasingly in demand, the association must substantially increase the first figure, which is still only a fraction

of the combined memberships of the six state library associations. To attract a more diverse participation in NELA activities from all levels of the library population, the association in 1974 offered for the first time a Sunday preconference for supportive staff who would ordinarily not be able to attend the regular 2½-day annual conference. The response was so enthusiastic that not all who wished to attend could be accommodated.

The NELA executive secretary (since February 1965) is Mrs. Nan Berg. The key support of the board and council, she maintains the association's office and its mailing address, P.O. Box 273, Holden, Massachusetts 01520, serving as the central medium through which both NELA members and the public at large may communicate most easily with the association.

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MARY A. McKENZIE

NEW ENGLAND LIBRARY BOARD

The New England Library Board (NELB) is an acquired name of the Governing Board of the New England Interstate Library District. The district was established in November 1967 by an interstate library compact agreement among six New England states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The compact laws of these states permit the establishment of regional and subregional library districts with a governing board comprised of representatives of the participating libraries.

A planning committee of the New England Library Association had been urging for several years the creation of a New England Library Board as a regional agency which would be representative of and responsive to the library needs of the six-state area. In response to the association's recommendation, the governing board of the New England District adopted new bylaws which designated the district board also as the NELB and defined its organization. The agreement was signed on October 6, 1972, at Newcastle, New Hampshire, by the following compact administrators for their respective states: Walter Brahm, state librarian, Connecticut; Ruth A. Hazelton, state librarian, Maine; Mary E. Flynn, director, Bureau of Library Extension, Massachusetts; Emil W. Allen, state librarian, New Hampshire; Elizabeth G. Myer, director, Department of State Library Services, Rhode Island; and Kathryn R. Nelson, state librarian, Vermont.

The purpose of the NELB was stated as the

> pursuit of better library services through the establishment of a synthesized and coordinated regional library program for all of the persons residing in the New England States . . . furthering library services through the active, cooperative, coordinated participation of State, public, school, college, and special libraries.

The bylaws also prescribed a panel of counsellors, an advisory group of some 40 persons: six from each state, one representative each of academic, public, school, and special libraries, and two of the lay community. The chief officers of the New England Library Association, the New England Council, the New England Governors' Conference, and the New England Board of Higher Education were also included.

The board, with the advice of its panel of counsellors, gave priority in its first year to securing funds for initial operation of its office. It is currently, June 1974, recruiting for an executive director.

WALTER BRAHM

NEW HAMPSHIRE LIBRARY ASSOCIATION

The New Hampshire Library Association (NHLA) was incorporated in 1889 by 50 "important men" from all over the state with its object "to promote the usefulness of New Hampshire libraries." Included in the group were legislators, lawyers, judges, bankers, and manufacturers, many of whom were also library trustees, but only one librarian, the librarian of Dartmouth College.

Several of the subjects studied by committees or serving as topics for speeches just before and after the turn of the century are still in the foreground of library discussions today: state aid to libraries, cooperation among libraries, school/public library problems, and how to attract the citizen to the public library and its services.

As early as 1911 a special meeting was called to approve a bill sponsored by NHLA for a traveling librarian to give aid and counsel to the small libraries. Three times such a bill was introduced in the legislature and voted down. Not until 1919 was there money for a full-time trained librarian to help small libraries, the beginning of extension work. In the same year, 10 traveling libraries were established with the help of the Federation of Women's Clubs.

By 1934 the purpose of NHLA had been revised "to promote the efficiency and usefulness of New Hampshire libraries and to cultivate fellowship among its members." This was the year that NHLA endorsed plans for regional library service working with a Citizens Library Committee and the Public Library Commission. From this point on we find new concepts and ideas regarding librarianship as the main concerns of the association: federal aid to libraries discussed in 1935; a forum on adult education in 1936; problems of the blind, deaf, and handicapped; microphotography in 1938; a resolution in support of freedom of thought in 1939.

The postwar years were marked by the passage of a library development act and a state-aid bill allowing all libraries, not just the poorest, to apply for aid. It is sad to note that these have never really been funded, although NHLA members do rally in Concord to testify before the legislature for the implementation of the programs as bills are introduced.

During this period the NHLA constitution was revised to read: "It shall be the purpose of the Association to promote good library service from all types of libraries to all people of the state and to cooperate with other groups with similar interests." In the various changes made in the purpose of the association in the past 87 years there is evidence of the gradual shift of emphasis in the work being pursued, although the original object of "usefulness" remains basic throughout.

Formerly, NHLA functioned as the agency for sponsoring workshops, encouraging the upgrading of the effectiveness of libraries and of librarians. More recently, these functions have been taken over successfully by the State Library with its staff devoted to the betterment of library service throughout the state.

The committees of the association—Legislative, Scholarship, Intellectual Freedom, Career Ladder and Certification—reflect the current interests of NHLA. The present aim regarding scholarship monies is to expend it on continuing education for the employed librarian. In 1969 a Special Resources Directory was pub-

lished, with a revision made available in 1972. Currently on the books is the underwriting of the cost of printing a union list of periodicals being compiled by the Southeast District Advisory Council. For 2 years the association administered a project entitled TASC, Target—the Aging in Sullivan County, made possible through a grant received from the State Council on Aging.

Throughout its history the New Hampshire Library Association has spearheaded many projects and endorsed new concepts in librarianship for the purpose of offering better library service to all citizens of New Hampshire. To this end the president of the association in 1966 was instrumental in convening a meeting of the boards of the several library organizations in the state for the purpose of "arranging a calendar to reduce the number of meetings and conflicts and for planning programs that would complement and stress each other." From this meeting evolved the New Hampshire Library Council. In the past, NHLA had joined with the New Hampshire Library Trustees Association in conferences, but many felt that more cooperation and coordination would ultimately result in a stronger library voice in the state and in better library service to all.

From these rather simplistic beginnings the council was formed, as all seven library organizations then active in the state voted to join in an organization of organizations:

> To synthesize and coordinate the efforts of all library groups in New Hampshire.
> To be the vehicle through which statewide programs are coordinated. To take specific interest and action in state and federal legislation and appropriations, National Library Week, library publications, scholarships, intellectual freedom, and other aspects of the total library image.

The council gives each organization a strong, statewide vehicle through which to operate, while allowing each to retain its own identity. In May 1970, the first joint conference was held. There have been growing pains, which hopefully will continue because there is evidence that the New Hampshire Library Association is gaining new strength as it meets these adversities.

Louise C. Price

NEW LIBRARY WORLD

See *Library World (New Library World)*

NEW MEXICO LIBRARY ASSOCIATION

Library development has come slowly to New Mexico. Frontier conditions prevailed until recently and librarians have had to contend with poverty, distance, sparse population, and sometimes indifference. A glance at a few salient statistics reveals that in area New Mexico ranks fifth among the states. In population it ranks

37th, with an average of slightly over eight inhabitants per square mile and an increasing trend toward concentration in Albuquerque and Santa Fe. Persons of Spanish surname comprise 40% of the population; American Indians, 7%. Rainfall varies from mountains to plains, but averages for the state are generally less than 20 inches. In 1972, per capita income for the nation was $4,549; in New Mexico it was $3,512. Understandably, then, the recurring problem in New Mexico library history has been that of finding the resources to serve a population of mixed cultures and heritages that is sparsely and unevenly spread over a wide and often beautiful, yet frequently dry and arid, landscape.

No one today knows just when the New Mexico Library Association was established, or how long ago attempts to organize it may have begun. Julia Brown Asplund, first librarian of the University of New Mexico, from 1903 to 1905, and indeed one of the first trained librarians to arrive in what was then New Mexico territory, recalled that several attempts to form a library association occurred between 1909 and 1915. No evidence of outright attempts that long ago now exists, but beginning in 1914 groups of librarians and friends of libraries occasionally got together for program meetings during conventions of the New Mexico Education Association (NMEA). These NMEA-sponsored groups had no continuity from year to year, kept no records, collected no dues, and apparently had no purpose other than sharing mutual problems and ideas.

During this period the small, scattered public libraries in the state were usually housed and supported through the efforts of local women's clubs. There were few newspapers, few school libraries (in a 1909 survey conducted by Asplund for the territorial Department of Education, one school district reported a library consisting of half a dictionary), and most people lived their lives with little access to reading materials. Many library supporters, including the New Mexico Federation of Women's Clubs and the Department of Education, viewed "traveling" book collections as a solution to the problem, and made several unsuccessful attempts to secure territorial funding of package collections. Undaunted by this failure, the Federation of Women's Clubs, with the administrative help of the University of New Mexico, collected four boxes of 50 books each that they sent out on loan to schools and local clubs.

During the First World War, New Mexico librarians and club women worked together on an American Library Association (ALA) project to supply books wherever U.S. training camps were located. After the war, in an effort to turn to civilian use the momentum that had been directed toward supplying servicemen with reading materials, ALA launched its "Books for Everybody" campaign, designed to improve library service in the South and Southwest. To accomplish this, ALA held several regional conferences which promoted an idea relatively new in library circles: development of county library systems. These systems depended upon several strong, strategically located school or public libraries plus a centralized agency to give direction. This, New Mexico did not have. A so-called state library, geared to the needs of the Supreme Court, had existed in Santa Fe since territorial days, but it provided little public service. New Mexico's scattered

librarians therefore decided that they would do well to continue to push for legislative support of traveling libraries and the establishment of a state library agency. As Mrs. N. F. Dixon, director of the Albuquerque Public Library, put it: "the distances are too great and the libraries too far apart to try the county system yet."

The ALA regional campaigns thus did not produce immediate results, but they brought librarians into contact with each other, publicized library conditions, and led indirectly to an event of eventual significance in New Mexico library history: the formation of the Southwestern Library Association (SWLA) in Austin, Texas, on October 26, 1922. Before and after that occasion, several Texans, including Elizabeth Howard West, director of the Texas State Library, and Dorothy Amann, librarian of Southern Methodist University, wrote numerous letters to any interested people they could locate in New Mexico, urging them to form an independent New Mexico library association in order to join SWLA.

With their encouragement, the organization of the New Mexico Library Association (NMLA) took place some time between late December 1923 and August 1924. In her presidential address to NMLA in 1936, Wilma Loy Shelton, then librarian of the University of New Mexico, stated that she and Evlyn Shuler, director of the Raton Public Library, and Edwin Sue Goree, head of the Santa Fe Public Library, met in the home of Mrs. N. F. Dixon and organized the association one cold December afternoon. She did not mention any specific date. Significantly for these women, no publicity attended the formation of the group and if they kept any records, none survived. There is no evidence that NMLA was actually organized until at least several months later. Preceded by much publicity, its first numbered meeting took place on August 29, 1924, during the first biennial conference of SWLA in Santa Fe. The program provided time for New Mexico librarians to "effect permanent organization," but whether they actually did so is not known, for again no minutes have survived.

Whatever the actual date of its organization may have been, NMLA did not adopt a constitution until 1927; and until 1938, because of its small membership base, it continued to meet during conventions of NMEA. In those days, many NMLA members were school librarians or teachers. In 1925, NMLA had 75 names on its rolls, some of whom may have been club women who attended the heavily publicized joint conference with SWLA in 1924. In 1923, it had 37 members, in 1950 approximately 78, and by 1975 membership had reached 465.

Administratively, despite continual constitutional revisions, NMLA has changed little over the years, though it has become larger and more complex. The women who organized it also served as first officers: Shuler as president, Goree as vice-president, and Dixon as treasurer. Shelton served as New Mexico's first vice-presidential representative to SWLA. Because of the small membership, officers handled multiple responsibilities. When Goree succeeded to the presidency, she also took over the duties of chairing the first NMLA standing committee: Publicity. Both then and later, New Mexico librarians regarded publicity as extremely important In a state with necessities hard to come by and social services, including education, competing for a share of the limited budget, NMLA has always used

publicity to stimulate public interest and bring about a more favorable climate for needed legislation.

The association is now governed by an executive board composed of the officers, ALA and SWLA councillors, chairmen of divisions and standing committees, plus the immediate past president. In 1951, NMLA changed the time of its annual conference from the fall to the spring of each year, thereby avoiding conflict with meetings of NMEA and paving the way for joint conferences with the Arizona Library Association in 1952 and 1954. A joint conference was also held with the Texas Library Association in 1961. In even-numbered years, NMLA convenes in Albuquerque, and in other cities in odd-numbered years. It usually conducts two business sessions during each conference and, to provide continuity, follows each conference with an orientation session attended by incoming and outgoing officers. The fiscal year coincides with the calendar year, but term of office is from April through March.

Revenue is derived largely from convention registration and exhibit fees, which until the 1960s were quite small. Yet, even with its limited funds, NMLA has issued several official publications. The first, *Newsletter to Libraries,* came out briefly in 1927. A mimeographed bulletin, *New Mexico Librarian,* appeared from 1938 to 1940. From 1968 to 1971, NMLA sponsored a journal, *New Mexico Libraries.* In 1972 this metamorphosed into an irregularly issued tabloid-size newspaper, less expensive to produce, entitled *New Mexico Libraries Newsletter.* During intervals, the State Library Extension Service carried NMLA news in its *New Mexico Library Bulletin.* Currently, the State Library performs the same favor with its publication, *Hitch Hiker.*

The first constitution stated simply that NMLA's purpose would be "to promote library interests of the state of New Mexico." Through the years, activities and conference themes have reflected this goal. Shortly after its formation, NMLA worked closely with the state Federation of Women's Clubs to secure passage of a law which permitted county library development, an earlier objective of ALA's "Books for Everybody" campaign. Although at that time, 1925, there were still only seven libraries supported entirely by public funds, New Mexico librarians had concluded that even a rudimentary county system would be the best way to encourage library development. Their next goal was the establishment of a centralized state library agency. To achieve this they again cooperated with the Federation and in 1929 secured legislation creating the State Library Extension Service. At the urgent request of NMLA officers, ALA sent its field representative, Julia Wright Merrill, to assist in these efforts. Housed in the State Museum quarters in Santa Fe, the Extension Service began operations with a budget of $2,000 for salaries and supplies and no money for books, but within 10 years, under the strong leadership of Asplund and her successors, it developed into an agency which mailed packages of materials in both English and Spanish directly to clubs and individuals, provided interlibrary loans, and gave professional advice in the establishment and operation of small libraries all over the state.

Following the creation of the Extension Service, NMLA turned its attention

to the ALA-sponsored idea of adult education. Conference programs of the 1930s began to emphasize this theme, as well as school library standards and books for children. Retrenchment in time of depression (or how to deal sympathetically with reluctant appropriating bodies and yet supply adequate service) was also an ALA-recommended theme endorsed by NMLA. At that time, New Mexico stood second among the states in illiteracy.

During the early years of World War II, NMLA promoted the creation of a State Library Commission to serve as a governing body for the Extension Service and to promote statewide development of libraries. Among the commission's earliest goals was a union catalog of special collections and research materials in New Mexico which NMLA debated during a number of conferences in the 1940s. The idea was not a new one, having been introduced by SWLA as early as 1929. A union catalog has continued to be a dream of New Mexico librarians because it would facilitate interlibrary cooperation and sharing of resources, so necessary in a state with limited means. Not until recently, however, has the technology existed to implement the dream and bring it to reality.

In 1940, NMLA endorsed the formation of a teacher–librarian section within the New Mexico Education Association. It did so on the grounds that such a group would help bring about closer cooperation between school and public libraries, but the action did not lead to the desired result. Instead, it encouraged most school librarians to work together through NMEA (now National Education Association–New Mexico). Thus, from a supportive organization, the Education Association has developed into something of a rival.

After World War II, New Mexico librarians helped draft an act requiring certification of public librarians, an idea suggested by ALA's "National Plan for Libraries." The New Mexico statute provided that public libraries above a certain size be administered by a person certified either through graduation from an accredited library school or by examination. It was bitterly opposed by a group led by Evlyn Shuler, NMLA's first president, who argued that the test was unpassable and the standards impossible for small libraries to meet. The issue erupted again in 1963 when amendments introducing greater flexibility and grades of certification were enacted. NMLA has not taken a similar stand regarding school librarians, many of whom have no professional training. While there are quite notable individual exceptions, all but the larger school libraries tend to be run by personnel called "aides." In 1953, and again in 1960, NMLA urged the state Department of Education to employ a professional librarian to supervise school libraries, using ALA standards as a guide. Its reluctance to do more may be attributed to a circle of causes and effects, among them the fact that most school librarians look elsewhere for leadership.

In the 1950s, when recruitment to librarianship became a national emphasis in library circles, NMLA established a scholarship fund named for a deceased president who had been particularly active in recruitment: Marion Dorroh. Also in this period NMLA achieved chapter status in ALA, endorsed ALA policies on intellectual freedom, marshaled its forces against censorship cases and bills that

cropped up stubbornly in the state for the next 20 years, and took advantage of the federal Library Services Act to recommend funding of regional branches of the Extension Service.

The idea of regional libraries, essentially a variation on the county library theme, was aimed at alleviating problems caused by scattered population, poor roads, and perennial lack of money. Originally introduced by ALA, it was first discussed at an NMLA convention in 1938. The New Mexico law passed in 1956 established five regional bases of the State Library Extension Service (there are now six), each having a basic book collection and supplying bookmobile service to sparsely settled areas. One result was improved library service to American Indians. Reaching the American Indian and Spanish-speaking population has been a continuing concern of NMLA. From the earliest years, conference programs have emphasized this topic, and the association has recommended bilingual service in areas predominantly Spanish.

Following an NMLA request, in 1960 Governor John Burroughs appointed a committee to study the establishment of a bona fide state library from the nucleus of the existing Extension Service. The new State Library was created by law on March 27, 1961; the older institution bearing that name was retitled, more appropriately, the Supreme Court Library. NMLA next worked to secure passage of a bill setting aside funds to construct a building for the State Library in Santa Fe. Dedication of this historic structure took place on November 20, 1966.

The last few years have been especially crowded for NMLA. For some time, it had urged the appointment of a library advisory agency to supplement the work of the State Library Commission. In 1967, under Title III of the federal Library Services and Construction Act (LSCA), it appointed the Library Development Council which was replaced in 1971 by the 14-member New Mexico Advisory Council on Libraries. In 1969, with the help of the original Library Development Council, NMLA sponsored legislation to permit the organization of a library consortium across state boundaries and contracted for a survey of library resources by an independent company, partially financed by LSCA Title III funds. The Arthur D. Little survey disclosed, not surprisingly, that due to "dispersal of a relatively small population over a large area . . . library service in New Mexico falls far short of what is needed." It made a number of recommendations to remedy the situation, including cooperative sharing of resources and establishment of a statewide information system centered at the State Library.

After publication of the Little report in 1970, groups of representative librarians, trustees, and citizens worked out a 5-year plan called the Coordinated Library Systems of New Mexico (CLS), designed to implement recommendations made in the survey. NMLA members ratified CLS during the 1971 conference, despite reservations that the plan might prove too ambitious for New Mexico's limited economy.

Reviewing developments since ratification of CLS, the State Library recently reported that much important work had been done to reach national standards by means of incentive grants to the 68 public libraries now in existence, educational

workshops all over the state, and special services for the handicapped. In 1972, NMLA hired a special assistant to the president to help with the increasingly complex legislative activities, and successfully supported an academic library bond issue resulting in $10 million to be spent on books by colleges and universities. Three university libraries joined the Ohio College Library Center system in 1974, and the State Library, with the help of SWLA, established a computerized information system capable of producing a bibliographic record of all book acquisitions in New Mexico. These, with the union list of serials published by the Library Development Council in 1969, have led to partial fulfillment of the earlier dream of a union catalog and more efficient sharing of library resources in New Mexico.

From its earliest years, the New Mexico Library Association has worked for extension and improvement of library services through identification of priorities, publicity, and active legislative efforts. Its conference programs have shown concern not only with library needs of New Mexico, but also sensitivity to a network of regional and national ideas. Greatly encouraged by other groups, including ALA, SWLA, the Federation of Women's Clubs, and the Library Commission and Library Development Council, NMLA cannot be assessed as an independently powerful group, yet it has always been energetic and optimistic, pursuing its objectives in an economic and geographic environment in which library development has not been easy.

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MARY JO DUCK WALKER

NEW MEXICO. THE UNIVERSITY
OF NEW MEXICO LIBRARIES

New Mexico is the fifth largest state in the Union but one of the most sparsely settled states. Its population is racially mixed and contains substantial minorities of Mexican Americans, American Indians, and Blacks. Agriculture, trade, tourism, and small industries occupy most of its citizens. Artists, craftsmen, and retirees are present in larger than average numbers. Albuquerque is the cultural, business, and financial center, and one-third of the state's population lives there.

New Mexico's state system of higher education consists of 10 junior colleges and several small and medium-sized universities. The largest and one of the oldest of these institutions is the University of New Mexico. The university serves 15,500 students, most of whom are enrolled on the Albuquerque campus. Eight hundred faculty members teach this student body. The university offers bachelor's degree programs in 70 academic fields, master's degree programs in 50 fields, and doctoral programs in 28 fields. The University of New Mexico is distinctive for its interest in Latin American studies as well as its strong departments of Spanish, Portuguese, Art, Anthropology, and History. Total 1972–73 university budget was approximately $80,000,000. A board of regents, president, and several vice-presidents form the university's chief administrative corps. The Albuquerque campus emphasizes distinctive adobe style architecture in harmony with its desert surroundings.

The university libraries consist of: (1) the central library, Zimmerman Library, (2) the Parish Memorial Library, and (3) the College of Fine Arts Library, all three located on the main campus; (4) the Law Library and (5) the Medical Sciences Library, located on the north campus; (6) the Gallup Branch and (7) Northern Branch Libraries in Gallup and Española, respectively; (8) the Harwood Foundation Library in Taos; and (9) the Civil Engineering Research Facility Library located in the Albuquerque outskirts. Each one of these libraries is independently supervised, except for the three located outside Albuquerque, which report to the director, Division of Continuing Education, and the three main campus libraries which form the General Library and are supervised by the dean of library services.

The General Library

Each one of the University of New Mexico Libraries will be described separately, beginning with the General Library and its three separate facilities. Ninety-five percent of the university's students receive service through this library. Centralized selection, acquisitions, cataloging, serials, and administrative services are provided in the Zimmerman Library for all three of the General Library's service units.

The General Library's collection contains 670,000 cataloged and processed volumes, several thousand uncataloged serials and pamphlets, 320,000 microforms, 80,000 maps, and 1,150,000 pieces of archival material. Current serial titles

received number 16,000, and 32,000 cataloged volumes were added to the collection during the 1972–73 year. Currently, the General Library is converting its collection from the Library of Congress to the Dewey Decimal classification system. According to the Cartter Report of 1966, *An Assessment of Quality in Graduate Education*, the University of New Mexico Libraries rank among the 10 best university libraries in the western states.

The General Library's budget has been modest for many years. Its financing is obtained through the university administration, which in turn is dependent for funding upon the Board of Educational Finance, an agency of the state government in Santa Fe. Recently, however, through the success of a statewide bond issue, the library's book budget has been greatly enlarged for a limited period of time. Budget for the 1973–74 fiscal year totaled $2.5 million ($1.3 million for materials and $1.2 million for personnel and other expenses), including federal grants.

In the 1973–74 year, the General Library had 150 full-time equivalent staff members, professional, clerical, and student assistants. All of the library's professionals have faculty status, rank, and title. Since its founding, the directors of the General Library have been the following:

M. Custers, 1892–1901
Kate Cunningham, 1901–1902
Julia Brown, 1902–1905
Della Sisler, 1905–1918
Wilma Loy Shelton, 1920–1947
Arthur McAnally, 1947–1949
David Otis Kelley, 1949–1972
John F. Harvey, 1972–1974
Paul Vassallo, 1974–

The General Library cooperates closely with the Library of Congress and the New Mexico State Library. It is a member of the Center for Research Libraries, the Southwest Academic Library Consortium, the Rocky Mountain Bibliographic Center for Research, and the Council of New Mexico Academic Libraries.

Major 1972–73 General Library accomplishments were the following:

1. New sets of library goals were adopted.
2. The library joined the Center for Research Libraries, Chicago.
3. An extensive series of staff and teaching faculty committees was used to encourage widespread participation in the library's administration.
4. An Administrative Council was established as a weekly forum for discussing policy matters and making decisions. In addition, monthly departmental meetings were held.
5. In cooperation with other campus libraries and with the Friends of the Libraries, a Library Lecture Series was started.
6. A Collection Development Division to supervise the library's book selection was established and manned.
7. An Administrative Services Department was established to coordinate several administrative activities.
8. A new library book storage area was occupied on the north campus.

9. Plans were made to upgrade substantially the Parish Memorial Library by increasing its book collection and stack storage space.
10. The Zimmerman III physical space was planned and construction started.
11. Service to the community and the library world through interlibrary loan was doubled during the 1972-73 year.
12. Several small reference sections were consolidated into one strong central reference department.
13. The Reference Department started a new program of close coordination with teaching departments.
14. A new service program of retrospective computer tape literature searches was started for university faculty members in cooperation with the University Technology Applications Center.
15. Free retrospective ERIC data base searches were inaugurated for education students and faculty members.
16. Library science periodical routing to library staff members was inaugurated as part of an in-service education program.
17. A new automated bookkeeping system was introduced in the Acquisitions Department.
18. An extensive series of approval and blanket book orders was established with foreign dealers.
19. A library publication program was inaugurated to cover both books and serials.
20. Improved police surveillance over the library was provided.
21. Full-time minority clerical staff members were increased from 10% to 20% of the staff.
22. The public catalogs of the Zimmerman, Fine Arts, and Parish Libraries were divided between authors and titles on the one hand and subjects on the other.
23. The Friends of the Libraries hired an executive director to coordinate its activities.

General Library plans for the immediate future include the following projects:

1. Further progress is expected toward Association of Research Libraries membership eligibility.
2. Library faculty salaries will be increased substantially until they match the salaries of teaching faculty members.
3. Serious staff shortages exist in several departments, and these shortages must be reduced.
4. A commitment is needed from the state Board of Educational Finance to construct the Zimmerman IV building in 1975.
5. A commitment is needed from the university administration to remodel Zimmerman I and II by 1975.
6. A policy and mechanism are needed for coordinating the work of the 35 campus libraries, information centers, and laboratory collections.
7. The library needs a well-organized statistical data collection program.
8. Systems analysis must be completed for the entire General Library.

The central library, now housed in the Zimmerman Library building, is the university's oldest and was founded about 1892, the year of the university's first course work. For most of the university's history, this was its only library. The central library was housed in parts of several classroom buildings for many years. The first separate campus library building was constructed in 1924 but is now

occupied by a section of the Art Department. For the past 40 years the central library has been housed in the Zimmerman building, centrally located on the main campus. Zimmerman I was constructed in 1935 and is frequently cited as an excellent New Mexico example of the modified pueblo style of southwestern architecture. John Gaw Meem was the architect. Currently, this portion of the building houses the Special Collections Department, three large and ornate reading rooms, the Reserve Book Section, and the nine-story stack tower. Attractive murals decorate the walls of this area.

Zimmerman II was constructed in 1966 and provides more modern library facilities than Zimmerman I, to which it is connected. It contains the library's Administrative Services Department, Reference Department, Circulation Department, Bibliography Division, and large Technical Services Division. An exhibit gallery is housed on the second floor. This building section contains four floors and merges directly into Zimmerman III, which was completed in 1974. Zimmerman III contains a large periodical reading room in the basement, plus shelving and reading areas on the separate floors. Zimmerman II and III are carpeted throughout. The entire building seats 1,100 readers in locked carrels, open carrels, and reading room tables and chairs.

Zimmerman Library is rich in special collections. The beautiful Clinton P. Anderson Room in Zimmerman I contains a special collection of western Americana. The Coronado Room contains an extensive collection of books and other materials concerning the history and culture of New Mexico. Several hundred bound volumes of photostats of the archives of Spain, Mexico, and New Mexico— letters, manuscripts, documents, and state archival materials assembled by the U.S. Historical Records Survey—may be found here. The business history collection contains records of the First National Bank of Santa Fe, the Ilfeld Company, Gross Kelly & Company, Bond & Son, Inc., and several other companies. The Vandeveld Collection of Mexican materials was purchased in 1939 by a special appropriation of the state legislature. The Catron Collection is an extensive and valuable library of Spanish and Mexican publications, those of the 16th to the 19th century. The Otero Collection contains volumes on the Southwest and valuable manuscript items. The library's map collection, housed in the Special Collections Department, is the largest in the state.

Zimmerman Library serves students and faculty members in all main campus university departments, and through membership in the Friends of the Libraries, services are available to nonstudents. Loan services are offered by the Circulation Department through the stacks, the circulation desk, the reserve desk, and the Interlibrary Loan Section in Zimmerman I and II. In 1972–73, 260,000 volumes were loaned directly to users, and 9,000 interlibrary loans were sent and received. In that year, 850,000 persons passed through Zimmerman Library's turnstiles, and the library was open 84 hours and 7 days per week. The Interlibrary Loan Section maintained its records on-line in the University Computing Center. Circulation per student averaged 20 volumes per year for 1970 to 1973.

The Reference Department coordinates advice and assistance to readers, and its professional librarians and clerks staff the Zimmerman II reference desk during all of the library's hours of opening. As New Mexico's largest research collection,

the Zimmerman Library is a bibliographic resource center for the entire state, and it is linked by teletype to the library world. Several special reference projects enable the library to give superior service to its users. The library is a regional U.S. government publications depository, and most of its documents are located on the third floor of the Zimmerman II building. The government publication collection is the strongest in the state. Material is received regularly from the Pan American Union, the United Nations, and the state government agencies of New Mexico. Microform materials are available to cover a number of serial titles and the publications of AEC, NASA, ERIC, HRAF, and many other agencies.

The Reference Department schedules hundreds of library orientation lectures each semester which involve whole classes of students. Service is provided to blind students through a collection of braille material. The Ethnic Studies Section is one of a very few existing minority reference services in American university libraries. Materials of Afro-American, Chicano, and Native American Studies can easily be accessed through this desk. Current bibliographies and vertical file material on ethnic studies are readily available.

Other Zimmerman Library departments carry out important responsibilities also, but work behind the scenes in serving the user. The Collection Development Division located in Zimmerman II guides the selection of library material and controls the General Library's materials budget. The Administrative Services Department provides General Library-wide services in personnel, finance, physical plant maintenance, and receiving library material. Planning, public relations, data collection, and automation are responsibilities of this department. The Administrative Services photocopy section is located in the basement of Zimmerman II. A half million pages of copies were produced in this section in 1972–73. Microfilm, microfiche, and photocopies are available as well as velo binding. Coin-operated typing rooms are provided in two locations.

Technical Services Departments include Acquisitions, Catalog, Processing, and Serials, each one of which carries out its traditional university role for the General Library. All four of these departments will soon be located in Zimmerman II and III. The Acquisitions Department orders and receives monographic library material. Under its supervision is the Gifts and Exchanges Section. The Gifts and Exchanges program is prospering, and 700 donors contribute 35,000 pieces of material annually to the General Library. The Catalog Department carries out original cataloging, and the Processing Department carries out the clerical tasks of cataloging. The Serials Department carries out all serials responsibilities except cataloging.

The headquarters of the Southwest Academic Library Consortium is located in Zimmerman Library. This consortium includes the libraries of 33 institutions of higher education in New Mexico, Oklahoma, and Texas. It was founded in 1967 by Dean James E. Sublette of Eastern New Mexico University and David Otis Kelley.

The William J. Parish Memorial Library

This library is located on the ground floor of the Business and Administrative Sciences School building. It contains 20,000 volumes of material related to the

study of business, taxes, labor relations, accounting, economics, and related fields. Both periodicals and books are represented in this collection. The library was established in 1967 when the Business and Administrative Sciences building was constructed and has developed rapidly since that time. The staff consists of two full-time persons, plus student assistants. Neosha Mackey has been the librarian since 1968.

Parish Memorial Library physical facilities are among the most pleasant on the campus. The library has an attractive and modern reading room seating 80 students and faculty members at one time. Adding and calculating machines are available for use. A seminar room and special group study rooms are also available. Books are selected by the Business faculty and the Parish librarian. All acquisitions, cataloging, and preparation-for-the-shelves work for this library is carried out by the Technical Services Division in Zimmerman Library. In 1972–73, the number of users was 65,000 and the number of home loans was 10,000. Immediate plans for developing this library include remodeling and extensive carpeting. The recently enlarged book collection enables the library to provide much improved service for its students and faculty members.

The College of Fine Arts Library

This library was established in 1962 in the Fine Arts Center on the main campus. The library contains the material for art, music, theater arts, and architecture, and services these departments of the university. It has grown rapidly to house 45,000 volumes and 11,000 recordings and tapes. The staff consists of two professional librarians and three full-time clerks. Donald Roberts was the first fine arts librarian, 1963–1968, and Ellen Bellingham the second, 1968–1973; James Wright was acting librarian, 1973–1974.

The Fine Arts Library's physical facilities include a periodical reading room, stack area, circulation desk, record cataloging office, and reading room area. A special room houses rare books and other valuable resources, and two practice rooms with pianos are located in the library. An audio center makes tape material available for use to large numbers of university students through specially designed listening facilities. The library has started a collection of manuscript material relating to the work of well-known composers and conductors. The Archives of Southwestern Music is located here; it consists of a large collection of tape recordings of the music indigenous to this area. A complete Fine Arts Library card catalog is also located here. During the 1972–73 year, 50,000 books and periodicals were loaned, plus 100,000 records and tapes; 125,000 individuals passed through the front door turnstiles. All acquisitions and cataloging work for this library is carried out by the Technical Services Division in the Zimmerman Library.

The School of Law Library

This library is housed in Bratton Hall, completed in 1971, on the university's north campus. It contains 110,000 volumes and is augmented by approximately

600 volumes each month. The library includes comprehensive collections of British and U.S. federal and state court reports, including special and annotated series, session laws, current state and federal statutes, legal treatises, periodicals, encyclopedias and digests, administrative reports, and other classes of legal materials. Special collections are being developed in American Indian law and in water law.

On the library's upper floor, the main reading room contains sets and individual titles of essential legal material. The New Mexico Collection and the Rare Book Collection as well as the Audio-Visual Collection are also located on the upper floor. The lower floor houses the main circulating library collection, organized in the Library of Congress classification. Duplicate circulating copies of many essential materials are available on this floor. In a basement stack area, several collections are maintained including the foreign law collection and the state documents.

Legal reference questions are handled by the legal research librarian located near the main reading room. Typewriters and photocopy machines are located in a typing room. Interlibrary loan and circulation service are maintained. Lawyer's dictation rooms are available also. A browsing room is maintained in which newspapers, popular magazines, legal periodicals, and new books are shelved. Increasingly, the library is called upon to purchase material in the social sciences to supplement its legal collection. Major sets of legal material are available in microfilm.

Directors of the Law Library have been Arie Poldervaart, 1947–1963, and Myron Fink, 1963 to date; 14 additional staff members work in this library at the present time. The library's 1973–74 budget totals $225,000, and circulation totals 14,300 items per year. This is the largest law library in New Mexico, and it is a member of the Council of New Mexico Academic Libraries.

The Library of the Medical Sciences

This library is presently housed in Medical School Building Number 2 on the university's north campus. The building houses the Albuquerque and Bernalillo County Medical Association's library material. The library contains a reading room with recent essential biomedical journal issues shelved there. Additional rooms house education media, a stack area, audiovisual material, and a MEDLINE terminal. An office suite is located on the second floor. Tours for student and faculty groups are arranged. A new building is being planned to serve this library.

The library's collection has grown to more than 74,000 items, including books, serials, pamphlets, technical reports, microfilm, microfiche, video cassettes, audio tapes and disks, slides, films, and filmstrips. It receives 1,500 current biomedical serial titles. Each year the library adds about 1,400 book and 2,800 journal volumes to the collection. Soon the Library of the Medical Sciences will take over service to the College of Pharmacy, and the university's collection of pharmacy material will be moved there.

Several national biomedical information network services are made available.

MEDLINE service accesses more than 400,000 journal citations to more than 1,100 important biomedical journals. TOXICON, SDILINE, ERIC, NTIS, CAC, and *Engineering Index* are other biomedical information network services available. Numerous biomedical periodical indexes are located in the library.

The Medical Sciences Library houses a Health Science Information and Communication Center jointly funded through a grant from the National Library of Medicine. Through this program, the following services are offered to New Mexico health personnel: (1) dial access tape library; (2) reference and information searches; (3) photocopying of items requested by mail or telephone; (4) MEDLINE searches; (5) consultation with regional medical program and School of Medicine faculty members; and (6) specialized information for planning, evaluating, and funding New Mexico health projects. Interlibrary loan service is provided to other libraries throughout the country.

The library staff brings together experts in the fields of information science and librarianship, audiovisual aids, education, and communication in an interdisciplinary approach to problems in medical communication and education. There are 21 full-time staff members. Robert T. Divett has been director since 1963. The Medical Sciences Library was founded in 1963 at the time the Medical School was founded. Total library budget was $231,000 for the 1972–73 year. The Medical Sciences Library participates in the activities of the Council of New Mexico Academic Libraries. It has pioneered in the use of computer and data processing techniques and in information management.

Other University Libraries

The libraries located in the Gallup and Northern Branches and in the Harwood Foundation are small collections organized for local use. The Gallup Branch contains approximately 5,000 volumes under the supervision of a professional librarian. It serves a student body of 300 full-time equivalents which is 40% American Indian and is located in the western part of the state. The new Northern Branch is under the supervision of a professional librarian and contains only 100 volumes to serve 400 full-time equivalent students at the present time. This branch shares facilities with the nearby Technical and Vocational School. The Harwood Foundation provides public library and art gallery service for the 4,000 people of Taos, New Mexico. It is supervised by a professional librarian and its collection totals 20,000 volumes. The Civil Engineering Research Facility, supervised by the university's College of Engineering, contains a small laboratory collection of technical material which supports its activities.

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<div align="right">JOHN F. HARVEY</div>

NEW ORLEANS PUBLIC LIBRARY

The New Orleans Public Library, a department of the municipal government, serves—on a free basis—the world-port City of New Orleans, Louisiana, with a population in 1970 of 593,471. In 1970, the total Standard Metropolitan Statistical Area had a population of 1,045,809, and while the neighboring parishes (synonomous with counties) have independent systems, many of their residents choose to purchase library cards at an annual fee because of the greater depth and more extensive scope of the reference material. The 1973 operating budget of $2,259,781 amounted to a per capita operating expense of $3.81, with a circulation figure for the same year of 1,276,085, or 2.15 books per capita. No registration files

are maintained. The total of in-house and telephone patron inquiries was 570,205 in 1973. The staff totals 160, of whom 38 are professionals. Since 1943, all employees except the city librarian and his first assistant have had civil service status. The New Orleans Public Library system is made up of the central library, located in the Civic Center; two regional branches; four major branches; five neighborhood branches; and two bookmobiles. A number of small circulating collections are maintained at homes for the aged, day care centers, community centers, and the parish prison.

While the New Orleans Public Library can trace its direct origin to 1843, it is interesting to note some of the earlier unsuccessful attempts to establish public libraries. As long ago as 1771, the Spanish colonial government shipped a number of crates of books from Spain for a school library which would also be available to trustworthy citizens. Although the books arrived safely, they were apparently stored for a few years and gradually disappeared without ever becoming part of a library (1). Except for a number of private subscription libraries, nothing more was heard on the subject until 1805. In that year, the territorial legislature authorized the creation of public libraries in all parishes. This was a thoughtful gesture, but nothing concrete resulted from it, except, perhaps, a hope for the future.

The New Orleans Library Society was chartered in 1805 and authorized to sell stock and conduct lotteries. Anyone could gain membership by paying an annual fee. By 1827 it contained 7,200 volumes in French and English and was open 3 hours a day. But by 1828 a fire had destroyed most of its books and it was in debt. By 1830 it was defunct (2).

Judah Touro, one of the greatest local philanthropists of the 19th century, founded the Free Library Society on April 10, 1824. It was later known as the Touro Free Library Society. Plans to erect a building never materialized and the collection which started out with over 1,000 volumes was housed in the Presbyterian Church. Interest eventually lessened and the society apparently drifted into oblivion some time before 1838 (3).

The New Orleans Commercial Library Society was begun on March 29, 1831 and was undoubtedly a reaction to the failure of the New Orleans Library Society. Members paid $5 each year for its privileges and at its peak in 1842 had access to 6,000 books. It was aided by appropriations from the state of $1,000 per year in 1833 and in the years 1838 through 1842. Even the city council appropriated some money for its support for a short time. In 1842 the library failed and its doors were closed.

This misfortune was short-lived, however, for Benjamin Franklin French, a local historian and author of several history books about the state, bought out the collection and opened it to the public at no charge. It was housed in the Merchants' Exchange until 1843, when a wealthy merchant, Abijah Fisk, died and willed his home in the French Quarter to the city to be used as a library. Three years passed and the city did nothing about this bequest, so Fisk's brother, Alvarez, purchased Benjamin Franklin French's library of 6,000 volumes and presented it to the city.

In this way, the Fisk Free and Public Library was born. Predictably, the city fathers neglected the institution for another 50 years, during which it struggled under poor management and meager appropriations. Administration was conducted for a time by the Mechanics' Society, from which many books were received, and later by the University of Louisiana, now Tulane University, until its consolidation in 1896 with the City Library to become the New Orleans Public Library. The librarians during this period were E. W. Perry, W. L. Finney, C. B. Stafford, C. G. Gill, and Miss Minnie Bell (4).

From 1836 to 1852 the city of New Orleans was gerrymandered into three semi-independent municipalities under one mayor and a common council. All services were triplicated with three separate councils, police departments, etc. On December 3, 1844, the Second Municipality, or American sector, created the Public School Lyceum and Library Society. Instrumental in establishing this society was Mr. Samuel J. Peters, one of the city's foremost business leaders. While the collection was housed in the City Hall, its intended purpose was to serve the school children, who could subscribe for $3.00 per year, as well as any citizen for $5.00 per year. Two interesting book catalogs were published, in 1848 and 1856, describing the impressive holdings (5).

The other two municipalities eventually created school libraries and these three were merged on March 18, 1859, becoming the Lyceum and Library Society Library, or City Library. This institution functioned until the 1896 merger formed the New Orleans Public Library. The librarians were R. C. Kerr, J. V. Calhoun, C. A. Ducros, C. Davisson, Miss M. Cooper, and Mrs. M. C. Culbertson. In April 1896, Mayor John Fitzpatrick convinced the city council to pass an ordinance consolidating the Fisk Free and Public Library with the Lyceum and Library Society Library. Thus, the first collection of 35,000 volumes, under the name New Orleans Public Library, came into existence. It opened on January 18, 1897 and, until 1908, was housed in St. Patrick's Hall, the former location of the Criminal Courts. By 1898 it was circulating a monthly average of 6,800 volumes and could boast of 10,200 cardholders (6).

A self-perpetuating board was created to administer the library. The members of the first board were F. T. Howard, Albert Baldwin, Jr., P. A. Lelong, F. G. Earnst, E. B. Kruttschnitt, G. W. Flynn, and S. H. March. William Beer was the first librarian. Beer also held the title of librarian of the Howard Memorial Library, a public reference library maintained by endowment funds, which was merged into the Howard–Tilton Memorial Library of Tulane University in 1938. He resigned in May 1906 to work full time at the Howard library. The following month, Henry M. Gill, a member of the New Orleans Public Library Board, was appointed librarian (7).

In October 1902, the heirs of Simon Hernsheim made a donation of $50,000 of which $40,000 became a trust fund, still in use, for the purchase of books.

The St. Patrick's Hall site was purchased by the federal government for the erection of a post office in 1905, so in 1906 the library of 70,000 books was moved to a temporary location in an old mansion on Prytania Street.

In the same year, after some negotiations with Andrew Carnegie in which the city threatened to turn down any offer of money unless the condition of naming the new library "Carnegie" was removed, the philanthropist gave $250,000 for the erection of a permanent building. The controversy arose because the city fathers did not want to belittle the past efforts of the Fisks and Hernsheims. This sum was later increased to $375,000. The city council appropriated some additional funds and on October 15, 1908, the beautiful structure was dedicated. It was designed by Diboll, Owen and Goldstein, and modeled after the Mars Ultor temple in Rome, which Augustus Caesar built after his victory at Phillipi. Located at Lee Circle, the building remained in use until the present central library building was occupied in 1958.

Mr. Gill continued his efforts with Andrew Carnegie to obtain money for branch libraries. Between 1907 and 1915, five branch libraries were built on city-owned sites, with Carnegie providing about $100,000 for construction. They were generally named after the street on which they were erected. The branches were situated along streetcar routes and were well distributed according to the population density at that time.

The Royal Branch was designed by Emile Weil and was dedicated on November 25, 1907, with a book capacity of 6,000. It was built at a cost of $25,800, in the French Quarter, and served the city until 1965, when it was badly damaged by Hurricane Betsy.

The Algiers Branch was designed by R. E. De Buys and was dedicated on December 28, 1907. Located across the river on the West Bank portion of the city on Pelican Avenue, it cost $26,000 to build and had a book capacity of 6,000. It served the city until 1965, when it was closed following the damaging effects of Hurricane Betsy. A recent surge of interest in the area prompted the city council to appropriate $180,000 for the renovation of the building. It reopened in 1975 as the Algiers Point Branch.

The Napoleon Branch was designed by Favrot and Livaudais and was constructed at a cost of $26,000, with a 5,000-volume capacity. It was dedicated on January 31, 1908 and is still functioning.

The Canal Branch was formally opened on August 26, 1911. Lagarde and Burk designed the building, with a capacity of 12,000 volumes, and its construction cost $36,000. Located near two high schools, the branch was noted for its work with students. It also housed the material for the blind from 1939 through the mid-1950s. New Orleans Public Library had accepted the responsibility in 1932 for the circulation of this material throughout much of the southeastern United States, but later the service was limited to Louisiana and Mississippi. This function is now carried on by the Louisiana State Library. The Canal Street Branch remained in use until 1958, when it was closed due to the proximity of the present central library.

The Dryades Branch opened on October 23, 1915. It was designed by William R. Burk and cost $25,000. Intended for the use of the Black citizens of the city, it had a capacity of 10,000 volumes and remained a segregated branch until 1955,

when the entire library system was desegregated. Use of this branch was discontinued in 1965 after damage by Hurricane Betsy.

A censorship case which appears very strange in the 1970s occurred as the anti-German sentiments of World War I swept the nation. On April 9, 1919, in compliance with an act of the state legislature, all German-language materials were withdrawn from circulation and a list of readers of these books was forwarded to the United States Department of Justice. The books were restored to use on May 11, 1921.

Henry M. Gill continued to administer the library system until December 31, 1928, when he was relieved of duty by the board of directors. During his tenure, he continued to press the city council for funds, especially for more branches. With no funds available for publicity, he and the board of directors encouraged library use by annual speeches at each school and by the distribution of reading lists. Before the end of his service, he saw the city appropriate funds in 1927 for the construction of the system's sixth branch, and the first to be built exclusively with city funds.

The Nix Branch was designed by A. S. Montz and built on a site donated by Dr. J. T. Nix and his brothers in memory of their father. Costing $30,000, the building was capable of holding 20,000 volumes and was dedicated on November 29, 1930. It fulfilled a long-standing need for the Carrollton section of the city, an area which from 1845 to 1874 had been an independent city 5 miles from the city of New Orleans.

In 1922, a program was adopted by which large numbers of books were circulated to the elementary schools. The books were the responsibility of the teachers who picked them up and returned them to the library. This practice, in various forms, lasted until 1961, when it was discontinued by the board of directors. While this policy accounted for a large circulation figure each year, it lessened the schools' incentive to develop their own libraries.

On February 25, 1932 a new, nine-member board of directors, appointed by the mayor, was authorized by the city council. On March 4, 1932, Daniel D. Moore resigned as librarian and Mr. Edward Alexander Parsons was appointed to take his place on March 7, 1932. Mr. Parsons, a well-known attorney, bibliophile, and specialist on ancient libraries, began a series of lectures on subjects ranging from Creole literature to Dante.

During these years a few timid citizens from time to time questioned the management of the New Orleans Public Library by individuals with no formal library training. By 1935, the chaotic economic conditions of the Depression had precipitated salary cuts and layoffs from the library staff as well as other phases of city government. Charges that favoritism was taking precedence over seniority began to appear in the press. As all of these factors increased in intensity, a citizens' group called the Inter-Organization Committee for Better Library Service and composed of 22 individual associations and clubs, including the New Orleans Federation of Clubs, demanded a complete change in the administration of the library. The library board began to seriously consider these demands and contacted

the American Library Association for advice. The result was a survey of every phase of the library system, completed by Mr. Jesse Cunningham, librarian of the Cossitt Library in Memphis, Tennessee, and Mr. Joseph Wheeler, librarian of Enoch Pratt Free Library in Baltimore, Maryland. The survey was a scathing denunciation of almost every aspect of the library operation: book selection, salary scales, location of facilities, poor building maintenance, budgeting, nepotism, lack of continuing education or in-service training, and low morale. Worst of all, New Orleans was second to last on the list of American cities in per capita expenditure (8).

Wheeler and Cunningham laid the blame for the situation directly on the administrators, the librarian, and the board. Their recommendations included a professional administrator at a reduced salary, restoration of all salary cuts, merit-only appointments with the library staying out of politics, a larger budget for books and binding, correction of the numerous deficiencies, and an aim toward matching the national average per capita expenditure. Mr. Parsons fought back with a 61-page rebuttal of the survey report, but the public and the board were adamant in their support of the survey. The *Library Journal* mildly overstated its point by writing that, "Its head librarians were as innocent of library practice as the brawniest stevedores on the waterfront." Finally, Mr. Parsons resigned in June of 1935.

Encouraged by the Wheeler–Cunningham survey, the library board began a search for a professional director, and on December 1, 1936, Mr. Edmund Lee McGivaren, Jr. was appointed librarian. Great strides were made by Mr. McGivaren in streamlining the management of the system, and further encouragement came from a modest budget increase from the city council. Even the American Library Association noted at its New York convention that, under Mr. McGivaren's administration, the New Orleans Public Library had made more progress in one year than many authorities believed possible in three (9). Unfortunately, in the midst of the library's renaissance, Mr. McGivaren died on April 24, 1938 after an illness of several weeks.

A search was immediately initiated to find a professional librarian to continue the far-reaching programs begun by Mr. McGivaren. With the advice of Essae M. Culver of the Louisiana Library Commission and the American Library Association, John Hall Jacobs was appointed to the position of librarian on July 15, 1938. He had been the supervisor of the Shelby County, Tennessee library system.

One of the first projects Mr. Jacobs embarked on was the construction of the Alvar Branch in the eastern area of the city, where a long-needed library had been recommended for years. With the Works Progress Administration financing 40% of the building cost of $32,000, the Alvar Street Branch was dedicated on November 7, 1940, with a book capacity of 16,000. In addition to this branch, many renovation, binding, and indexing projects were made possible through the Works Progress Administration and the National Youth Administration, which provided as many as 80 extra workers at times.

The first bookmobile service was begun in June of 1940 with a vehicle loaned by

the Louisiana Library Commission. Within 6 months it had circulated 10,000 books. Radio story hours and other programs were also initiated by Mr. Jacobs.

In 1940, the library received a bequest of $250,000 from the estate of Mrs. Norman H. Mayer. However, because of the intervening war years, no capital projects were planned and the money was invested in municipal bonds.

During the war, book stations were established at nearby military bases, and special attention was given to the needs of industry and labor, which were operating in high gear around the city. Mr. Jacobs was granted a leave of absence on April 29, 1943 to accept a commission in the United States Naval Reserve. Mr. George King Logan, then head of the Adult Department, held the position of acting librarian until January 1, 1946, when Mr. Jacobs resumed his library duties.

Mr. Jacobs continued to pressure the city government for more branches upon his return in 1946, with the result that a branch was opened in temporary quarters on St. Bernard Avenue for Negro patrons. Mrs. Nora Navra left a bequest of $15,000 to support and improve this branch. In addition, the city archives department at city hall was placed under the library's administration.

In 1948, the St. Charles Avenue home of the silent film star, Marguerite Clark, was purchased from Robert S. Eddy, Jr. and presented to the library board by Mr. and Mrs. Harry Latter in memory of their son, who had been killed in the war. This building, which had been constructed in 1907, was dedicated on October 31, 1948 as the Milton H. Latter Memorial Library. Extensive renovations were necessary to adapt it for use as a 20,000-volume library, but much care was taken to highlight and retain the original character of the building. It occupies one entire square and, like Nix branch, is on the route of the St. Charles streetcar, the oldest street railroad in the nation. The Latter structure has an outstanding circulation record and remains one of the high points of tourist interest.

In 1949, $30,000 was given by Mr. and Mrs. Theodore V. Martinez for the establishment of the Theodore von La Hache Music Library. This collection, consisting of recordings, sheet music and the like, remained at Latter Branch until 1958, when it was moved to the central library.

The bequest of Mrs. Norman Mayer of $250,000 in 1940 resulted in two new branch libraries: the Norman Mayer Memorial Gentilly Branch and the Norman Mayer Memorial Broadmoor Branch. The Norman Mayer Memorial Gentilly Branch was dedicated in March 1949. It was designed by Allison Owen to utilize 20,000 volumes. Renovations using Library Services and Construction Act funds in 1969 added a large auditorium and increased its book capacity to 35,000. The second branch to result from the prewar bequest of Mrs. Norman Mayer, the Norman Mayer Memorial Broadmoor Branch, was dedicated on April 4, 1954. It was purchased and renovated from its prior commercial use to house 15,000 volumes, at a cost of $55,000.

Meanwhile, in 1952, two important collections were received. The Westfeldt Art Print Collection of 33 prints was donated by Martha Gasquet Westfeldt and opened to the public in June of 1952. Currently, this very popular circulating collection numbers 712 prints. The other collection, the Souchon Jazz Collection,

was presented to the library by Dr. Edmond Souchon and opened for reference on May 19, 1952. It is composed of over 2,000 recordings, primarily 78 RPM, pertaining to the history of early New Orleans jazz. Both collections are now a part of the Art and Music Division.

A new survey highlighting buildings was conducted in 1953 by Alfred Morton Githens, the well-known consultant on library architecture. His report advised against spending any more money on the central library because of the shifts of the population and business community during the previous 45 years.

The long-awaited plan to replace the branch located in temporary quarters on St. Bernard Avenue was finalized with the dedication on May 2, 1954 of the Nora Navra Memorial Branch Library. It was designed by Jules de la Vergne to house 15,000 volumes, at a cost of $60,000.

The Robert E. Smith Branch, dedicated on April 8, 1956, was the last of the neighborhood branches to be built. Donated by Robert E. Smith, a well-known local land developer, and his wife, it was designed by Saputo and Ledner in an octagon shape with a "floating" roof. The Smiths presented the completed project to the city to house 20,000 volumes.

John Hall Jacobs's crowning achievement was the dedication of the new, $2,650,000 central library on December 15, 1958. Designed by Curtis and Davis, the building has three floors above ground and two basement levels. It is attractively situated on the corner of Loyola and Tulane Avenues and has two interior patios which are open to the sky for the enjoyment of the employees. The contrast between the old library, with its long flights of stairs, and the new building was so striking that the local press referred to it as the "Cinderella Library." Part of a civic center which includes the city hall, state office buildings, the civil courts, and state supreme court, the library building combines flexibility of design with departmentalized service. A touch of the nearby French Quarter is supplied by the iron lacework sunscreen of modern design which surrounds the three glass walls composing the front and sides of the library.

A reorganization of departments was undertaken upon moving into these spacious quarters. The former adult department was divided into subject specialty divisions: Art and Music (including the La Hache Music Library); Business and Science (including the U.S. government document depository); General Services, now called Information and Reference; Louisiana (including city archives, newspapers, microfilm, and recently, genealogy); and Circulation and Extension. The Extension Division was later made a separate unit under the title Branch Services. The old children's department became the Juvenile Division. Technical process divisions were merged in 1966 to form the Technical Services Department. In 1970 a Serials, Binding and Duplication Division was created within Technical Services, reflecting the continually expanding workload of those areas.

This new division of labor triggered the growth of the subject collections. The Business and Science Division has become one of the most active library agencies. With emphasis on contemporary issues and the local business community, the

division has worked toward improving its collection and publicizing its services. A bimonthly newsletter, bookmarks mailed in bank and shareholders statements, weekly newspaper listings of new books, and newspaper articles have aroused local interest in the division. Close cooperation with city, state, and federal agencies has made the division a much-used information and referral center. A useful adjunct to the cataloged collections is the U.S. government documents depository.

The Louisiana Division has built the initial city archives collection of manuscript records dating back to 1769 into a multimedia depository of city records in the form of photographs, slides, motion picture film, and tape and wire recordings as well as the traditional paper material. It also operates a microfilm laboratory with a continuous program of preservation of these historic materials.

Mr. Jacobs resigned in 1960 to head the Atlanta Public Library System. He was succeeded on September 1, 1961 by Jerome Cushman, former librarian of the Salina, Kansas public library.

Mr. Cushman's first goal was to increase the city government's support. This proved to be an uphill battle with threatened branch closings, fund freezes, and the like, but he persuaded the board of directors to contract with John Mackenzie Cory, deputy director of the New York Public Library, to conduct a survey specifically aimed at branch development. The survey recommended a system of regional libraries, especially in areas of the city which had developed rapidly since the war and whose populations were at great distances from existing library facilities. It also pointed out that, with one exception, branch development had been based entirely on the benefaction of a few generous citizens (*10*).

With the acceptance of the survey report by the board of directors, a new impetus was given to the work of Mr. Cushman, who soon began to see the fruits of his labors in a vastly increased book budget, two new bookmobiles, and plans on the drawing board for one new regional library. Mr. Cushman resigned on July 30, 1965 to accept a teaching position at the UCLA Library School. His place was taken by Guenter Jansen, librarian of the Mobile, Alabama Public Library.

The Algiers Regional Library was dedicated on April 19, 1966. It was designed by Harry Baker Smith to house 30,000 volumes and has an auditorium. Part of the $486,000 building cost came from Title II Library Services and Construction Act appropriations administered by the Louisiana State Library. Within a month, all expectations for circulation and use were exceeded.

Mr. Jansen's main drive was aimed at achieving maximum efficiency in the technical services area. Many new procedures were introduced while many "traditional" methods were dropped. He also continued the efforts of his predecessors to obtain more city and federal funds for the library. During his administration, plans for the second regional branch were laid. Mr. Jansen resigned on December 6, 1966 to accept the position of librarian at the Suffolk County, New York system. He was succeeded by M. E. Wright, Jr., then assistant city librarian. Mr. Wright was confirmed by the board on May 26, 1967 after serving as acting librarian during the interim and continues in this office as of this date.

The East New Orleans Regional Library was dedicated on October 23, 1968. Harry Baker Smith designed the $53,000 building, which has accommodations for 30,000 volumes and an auditorium.

Under Mr. Wright's stewardship, the New Orleans Public Library has moved into the 1970s with a determination to bring the largest variety of services to its clientele in the most modern manner possible. The Jericho project was funded on a pilot basis in 1972 to "break the barriers" and extend services to the Spanish-speaking communities and to improve service to the Black communities and to the elderly. Using Library Services and Construction Act funds, the pilot project also served the neighboring parish of St. Bernard. The success of the project led to the establishment of the Foreign Language Division, which is staffed with bilingual personnel and continues to achieve new records in services.

The Acquisitions Division is nearing the end of its first year of automated ordering via Baker and Taylor's BATAB system. Book orders are processed on key-to-disk consoles and the computer tape is run on city hall hardware. An automated serials inventory is presently being programmed. The circulation system, currently using microfilm check-out equipment, is to be automated in the not too distant future. The library has recently become the referral center for the SEALLINC system. This is a system of 16 special, university, college, and public libraries in southeast Louisiana which uses federal funds and involves the sharing of materials and coordination of services with a goal of delivering requested material within 24 hours. New Orleans Public Library is a member of the SOLINET system and in 1975 will have on-line access to the shared cataloging and book location services of the Ohio College Library Center. All cataloging and catalog production will be handled by SOLINET, a major advance in processing books efficiently.

In 1973, the library began a special reference service for officials in city government. Not technically a municipal reference library, Urban Affairs Service is a current awareness program serving agencies and individuals in city government. Users of the service are provided rapid access to information through a selective dissemination process. A profile, delineating areas of involvement and subjects of concern, was prepared for each agency served. The profile is then used as a guide in the daily scanning of newspapers, periodicals, and commercial services. Although the current awareness program is the major function of the service, patron requests for specific information on any topic are also handled through the library's total resources and the SEALLINC facilities.

In anticipation of cable TV's arrival in this area, the Community Relations Division has been gaining experience with the library's portable TV cameras. Recent examples of programs attempted have been the recording of the Cajun Mardi Gras, jazz funerals, and discussion sessions regarding Louisiana's 1973 Constitutional Convention.

The history of New Orleans Public Library has been like a road lined with obstructions, weathered more often by rain than by sunshine; but through the dedication of its librarians and staff, it has reached a point where its budget has doubled in the past 10 years. It is a library which has concern for the past but is prepared to cope with the future.

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COLLIN BRADFIELD HAMER, JR.

NEW-YORK HISTORICAL SOCIETY

Of the great private historical societies in the United States, those of Massachusetts, New York, and Pennsylvania are preeminent both chronologically and qualitatively, and the first two might have been contemporaneous. When John Pintard (1759–1844), a prominent New York merchant and master of a substantial library of American history, was visiting in Boston in the summer of 1789, he called on Rev. Samuel Belknap and discussed the possibility of a society of antiquaries similar to that of London. While the Massachusetts Historical Society came into active existence well before the end of the century, it was only in 1804 that Pintard (who had met with financial reverses in 1792) and a small group of prominent New Yorkers founded the New-York Historical Society.

From the very beginning the New-York Historical Society emphasized the importance of collecting books, manuscripts, and source materials in general relating to the entire Republic as well as to Manhattan and New York State. In the *New-York Herald* of February 13, 1805, barely 2 months after the official foundation of the society, a statement of policy and, specifically, of library acquisitions, was printed. There was the entire spectrum of categories of library materials ordinarily considered essential, but, in addition, there was specific mention of
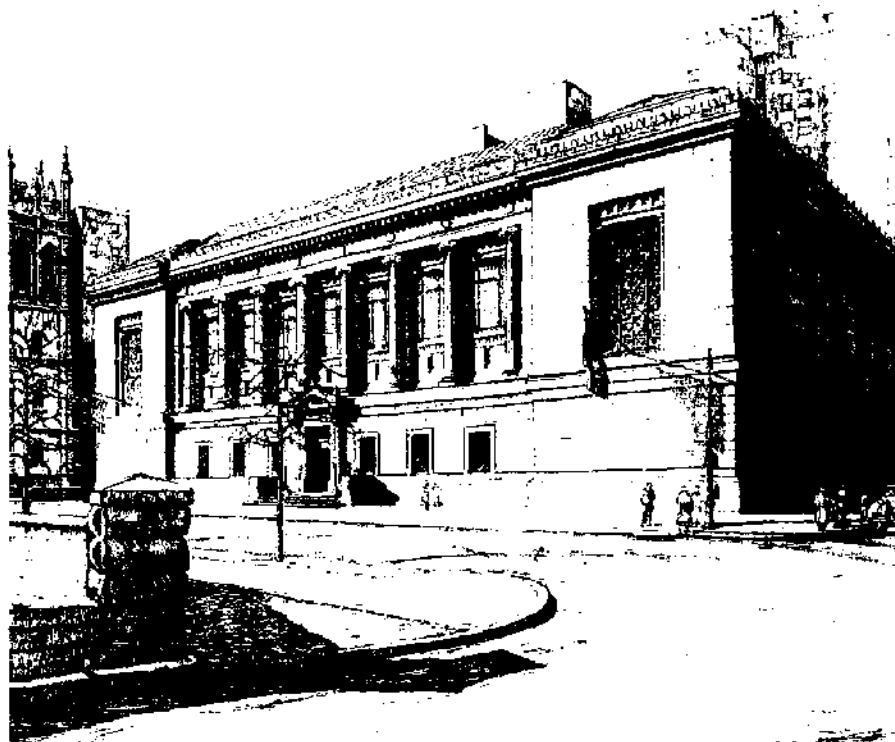
FIGURE 1. *Etching by Ernest D. Roth of the New-York Historical Society. (Courtesy of the New-York Historical Society, New York City.)*

"information which will throw light upon the state of morals in our country," for example, drunkenness, gaming, dueling, suicide, conjugal infidelity, prostitution, etc. The result is a collection that is distinguished among those of historical societies for its breadth, including, for example, one of the finest existing collections on murder in America.

John Pintard, an inveterate collector, could not afford to give his valuable collection on American history to the society, but he did sell it at cost in 1809. Other acquisitions enriched the society to such an extent that it was felt necessary to incorporate in 1809 as the New-York Historical Society (the hyphen thus being perpetually fixed in the title as a legal matter). As early as 1811 there were publications based on the library's holdings, the first volume of the *Collections,* including the journals of Verrazano and Hudson and the laws established by the Duke of York for the government of the province in 1664/65. A special friend of the society in these days was Mayor De Witt Clinton, who in 1814 secured legislative permission for the society to raise $12,000 by means of a lottery.

Important acquisitions during this early period, such as the Revolutionary War papers of General Horatio Gates (in 1816), added stature to the well over 5,000 items already accumulated, and by 1818 the society wisely decided to employ a librarian, Stephen B. Hutchings, for $100 per annum. But financial problems plagued the society gravely, and it was only in 1827 that effective lobbying in

Albany secured a state grant of $5,000 if the society could find a way to pay off its debts, totaling $7,500. It is not without duplication in the annals of American historical societies that the society managed to balance its books by not paying John Pintard the remainder of what was owed him for his library. Pintard, treasurer through 1827, never attended a meeting after 1825.

By the end of its first half century in the 1850s, the society had moved forward steadily, despite occasional short periods of depression, and in 1857 it was finally able to move into its own home on Second Avenue and 17th Street, an apparently adequate building for its by then rich collections of books, pamphlets, newspapers, and manuscripts as well as of portraits and other graphic material. One of the most spectacular acquisitions occurred during the Civil War, when the original water colors of Audubon's *Birds of America* were purchased from the artist's widow at a fraction of their real value. Publication was also stepped up. Ten volumes of the *Collections* had appeared by 1858, and in 1868 the first volume of the *Publication Fund Series* was issued, to be followed in subsequent years by nearly a hundred volumes.

The Second Avenue building, like that of any vital library or museum, quickly proved to be inadequate, and in 1885 there was a conditional gift of $100,000 from Mrs. Robert L. Stuart for a new building, provided matching funds of $150,000 could be raised. Vastly more proved to be needed until the central portion of the present stately building on Central Park West between 76th and 77th Streets was finally completed in 1908. Three decades were to pass before wings were added and the building was reopened in its present form in 1939. A succession of distinguished librarians and directors since this period has made the society, in its new building, one of the most effective instruments for research in American history. Robert Hendye Kelby, who retired as librarian in 1921 after 53 years in the society, was succeeded by Alexander J. Wall, employed by the society first in 1898 as a 14-year-old lad. In 1937 his title was changed to director, and he continued to serve until his death in 1944. He was succeeded by R. W. G. Vail, who retired in 1960 and was followed by the present director, James J. Heslin.

While the society's membership is not large, it has included in the past some unusually dedicated individuals, and the result is a substantial endowment (in part not used to full effectiveness due to restrictions on the use of income). There are no public funds, even though the society performs many significant services for the city and the nation. Thus the Education Department has sponsored story hours for children in recent years, and it has conducted gallery tours of the exhibits for various groups, including the handicapped. Statistics of use both for research and popular education as reported in the director's *Annual Report* are impressive. Its continuing publication program is a major service to American historical scholarship. The *New-York Historical Society Quarterly*, begun in 1917 by Librarian Kelby, is one of the more important scholarly journals in the field. Recent publications include the *Catalogue of American Portraits in the New-York Historical Society*, published by the Yale University Press. The depth of the museum collections is illustrated by the recent publication of Paul Hollister, *Glass Paperweights*

in the New-York Historical Society, one of the largest collections of these decorative antiques in the world, perhaps the largest.

The collections of the library beggar description. The more than one-half million volumes of printed books include extraordinary collections of American almanacs, American genealogy, Indians (including a remarkable group of captivities), early American imprints, early American song books and hymnals, early travels in America, early American trials, the circus in America, Civil War regimental histories, fishing and angling, Jenny Lind, maps, military history (especially of New York units), naval and marine history, New York City's history (including such basic things as virtually complete runs of directories, indexes to vital statistics and wills, and early official records), newspapers (fourth largest collection of 18th-century newspapers in the country), slavery, Spanish-American War, trade cards and business and professional memorabilia, city and county histories not only of New York but also of New England, New Jersey, and Pennsylvania. The manuscript collections have always been of greatest significance, and when Timothy Alden's catalog of the collections was published in 1813, 51 were listed. Today there are over 300,000 pieces (for whatever significance the numerical description of manuscript collections may have), and they include singularly important material from the Colonial and Revolutionary periods. There are also extensive collections of diaries, journals, and business records from New York City. The national importance of the society is aptly illustrated by its largest single collection of manuscripts, the papers of the American Fur Company, amounting to 131 volumes and over 18,000 separate pieces. A now out-of-date guide is the 96-page *Survey of the Manuscript Collections in the New-York Historical Society* (1941), but it may be supplemented by the literate and eminently readable annual reports of directors Wall and Heslin. The graphic material is especially significant not only for the portraits and paintings, but also for things such as early political caricatures and posters, steamboats, photographs, lithographs, and prints in general, with special emphasis on New York City and State, but also on material of national importance which fits into the collections. The singularly rich museum materials may receive only a reference here, but it is important to note that much in these collections fits in very closely with the library material.

Although the New-York Historical Society was and will continue to be a major research facility of national importance, it is perhaps the most active of the private historical societies in service to the community. Without any official support, its services to scholars and the broad public of the city have been exemplary for any similar institution which has comparable means—never enough, but in this case somewhat more than many sister societies have enjoyed.

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NEW YORK LIBRARY ASSOCIATION

The New York Library Association (NYLA), founded in 1890 at the close of the annual Convocation of the University of the State of New York, was the first statewide organization of librarians in the United States. George W. Curtis, distinguished author and chancellor of the university; Andrew Draper, superintendent of public instruction; and Melvil Dewey, secretary of the Board of Regents and state librarian, were the chief sponsors of its organization.

At the meeting on July 11, 1890, Chancellor George W. Curtis presided over a long discussion on library development in New York State. The 43 members in attendance voted to organize an association and the *Constitution* was adopted.

The objectives of the new organization were stated as:

(1) stimulate library interests in the State of New York; (2) secure the fullest possible cooperation with the American Library Association in promoting general library interests; (3) organize and promote among New York libraries exchange of duplicates, interlibrary loans and other forms of organization; (4) secure from the Legislature in harmony with the broad basis of the new University Law, a consolidation and revision of the many existing laws affecting libraries, with any needed new laws in regard to founding libraries; (5) enroll all whose interest can be depended on and then step by step work toward the ideal when the libraries of New York shall, in educational efficiency, be second to those of no state or country in the world (*1*).

It was not until November 19, 1929 that the Board of Regents granted a provisional charter incorporating New York Library Association "as a library association for the purpose of promoting library interests in the State of New York" (*2*). An absolute charter was granted to the association on December 20, 1946.

A fitting symbol of the long history of the association is the gavel used by the president at all business meetings. This gavel was made from a black walnut tree said to have been planted by Sir William Johnson in 1765. This tree stood on the grounds of Sir William's home at Johnstown, New York, until 1926 when it was cut down, having become a menace to adjacent buildings. The gavel, a gift of the Johnstown Public Library, is a replica of one of the set used in St. Patrick's Lodge No. 4 F & AM founded by Sir William Johnson in 1765.

The NYLA has had a close relationship with the American Library Association (ALA) throughout its history. In 1913 ALA amended its constitution to include a representative of each state library association on the ALA Council. The NYLA

accepted the invitation following the approved amendment and appointed the president of NYLA as the representative. The NYLA petitioned ALA in 1922 to accept NYLA as a chapter member. Reestablishment of chapter status was granted in 1956. From that time until 1971, all NYLA members elected the state representative to the ALA Council. Since 1971, this representative has been elected by ALA members in the state. New York members have been active supporters of legislation and issues with which ALA has been concerned on the national level.

Melvil Dewey, state librarian, was elected president of the NYLA for the first 3 years following its formation. The objectives of the new association became the guide for the action program implemented by the Executive Board. To stimulate library interests, papers were presented at annual meetings, later to be published in *Library Journal* and *New York Libraries*. Standards for public libraries were formulated, best 25 books of the year approved, and the cooperative work of publishing reading lists undertaken. In 1891, the standing committee on legislation proposed the legislation needed to "make more practically useful the $50,000 a year now appropriated by the legislature for library purposes" (*3*), and in addition requested that amount for public libraries and an additional $50,000 for the "pedagogical district school libraries" (*3*). The annual meeting became "Library Week," frequently held at a resort hotel such as Lake Placid Club, with a flexible schedule of meetings to allow opportunity for conferees to enjoy the recreational offerings of the conference site.

Early concern for improvement of libraries led to the inauguration of Library Institutes to be held in different places in the state. A list of topics was sent to libraries and discussions held on those topics receiving the most votes. As many as 30 institutes, attended by 1,619 librarians and trustees, were held in 1 year with the NYLA the sole supporter of the project. In 1904 the Executive Board presented to the regents a report of the Committee on Library Institutes recommending that the state Education Department undertake the development of additional institutes to the end that more libraries might be reached. Day-long and extended institutes of 1 week, sponsored by the NYLA, with the state Education Department assisting in the program planning, continued to the mid-1930s.

The NYLA from its beginning established cooperative working relations with the state Education Department. The NYLA has served in an advisory capacity through its work on surveys and Commissioner's Committees studying certification, training, and recruitment; public library service; library development for all libraries; financial needs; and direct access in public library systems. Reports of committee work have kept the state Education Department aware of needs in library service.

Continued improvement of the status of professional librarians, library clerks, library technicians, and library assistants has been the result of the work of the Personnel Administration Committee. From the Committee of Three developed the Voluntary Certification Plan of 1923. The Compulsory Certification Plan as recommended by the committee became a law in 1931. The Personnel Administration Committee prepared a classification system for positions in public libraries, in an effort to achieve uniformity of titles for comparable positions, which was adopted

by the New York State Civil Service Department. In 1963 the committee urged liberalization of certification regulations to ease the shortage of librarians and the placement of librarians in the noncompetitive class of civil service. In 1969 the NYLA published the committee's model for personnel administration and policy manual, which has had recognition nationally. A best seller is the committee's publication, *Typical Class Specifications for Professional Positions in Public Libraries Under Civil Service*, prepared in cooperation with city and state agencies. The most recent addition to the *Typical Class Specifications* is the position of library assistant. In 1971 the civil service created this position in its classification.

Recruitment to the library profession became a necessity for the NYLA in the 1960s. The action program included a 2-day recruitment workshop, display at the New York State Fair, publication of *Financial Assistance for Library Education*, and formation of four regional recruitment centers.

In the effort to improve standards of the library profession and of individual librarians, scholarship awards were instituted in 1929. These permanent scholarships were established for full-time graduate study at leading library schools. Additional scholarships for further study were offered by individuals and sections, often in honor of librarians who have given outstanding service in New York State. The Scholarship Committee administers the scholarship funds made available by the association, the Adult Services Section, the Children and Young Adults Services Section, and the College and University Libraries Section. To honor outstanding service to the association and the library profession, awards are made annually. One of these is the Asa Wynkoop Award, established in 1927 to honor the inspector of libraries in New York State who had received the first professional librarian's First Grade Certificate and who assisted small village libraries throughout the state for many years. The L. Marion Moshier Award was established in 1956 on her retirement from the directorship of the Library Extension Division and the award honors a librarian in a rural area in New York State.

Legislation related to libraries in New York State has been a concern of the association, and the long history of years of committee work for the passage of desired legislation points to several highlights in bringing library service to all people in all parts of the state. It was as early as 1912 that the idea of county and multicounty systems and regionalization was first considered. The minutes of the annual business meeting record a recommendation to "divide the state into districts, and issue books from large to small libraries" (4). In 1928 the association pledged its support to the establishment of county libraries and stated that this task would receive major attention. In 1944 the Council of the NYLA requested the Department of Education to have its Research Division make a complete study of the present and future status of statewide library service. The survey published in 1946 proposed a plan for regional library service. The Committee on County and Regional Libraries, later called Committee on Public Library Development and Standards of the NYLA, together with the Legislative Committee, reached its goal in 1950 when the legislature passed a bill for organization of larger units of library service on county or multicounty levels. The association then assisted the state

Education Department in drafting minimum qualifications to make county or multi-county units eligible for state aid. The Committee on Public Library Development and Standards and the Library Trustees Foundation of New York State held institutes for librarians and trustees to explain the law and assigned their members to specific counties to offer services as consultants. The committee also published a manual of questions and answers about establishment of a county system. The Monroe County Library System, established in April 1953, was the first county system; Clinton and Essex counties established the first multicounty system in 1955; and the first cooperative library system was formed in 1958 by Saratoga, Warren, and Washington counties.

The second phase of cooperation between libraries began with the studies by the state Education Department on problems of advanced reference and research library service. In 1961 the NYLA Committee on Reference and Research Library Resources published a brochure, *Ten Million Words,* which contained recommendations on "making any book available to any man at any time" (5). The significant breakthrough occurred in 1966 when the appropriation to initiate the Reference and Research Library Resources Program (3 Rs) was approved by the legislature. Regional networks now cover the entire state.

The Legislative Committee, formerly the Committee on Library Standards and Legislation, has been alert to the problems of support of libraries. In 1952, after working jointly with the Legislative Committee of the Library Trustees Foundation of New York State, the State-Aid-to-Libraries Bill was passed. The problem became even more acute in the 1970s, and the NYLA answered the call of the ALA Washington office to contact all Congressmen from the state to gain approval of the Hathaway Amendment, which was eventually passed. Presidents of the NYLA have presented the association's program for support of library service annually to the Board of Regents. The committee has employed a variety of methods to establish communications between the membership and the legislator. Among these have been legislative workshops, a *Legislative Bulletin,* part-time legislative representatives in Albany, and a "telephone tree." In 1972 the NYLA mailed a questionnaire to all candidates for the New York State legislature requesting their position on library matters. Responses were printed in the *NYLA Bulletin* to assist members in their voting.

The Intellectual Freedom Committee was appointed in 1953 "to promote, protect, and encourage maximum public access to information" (6). To accomplish this charge the committee's functions became both educational and investigative. The Code of Procedure and Statement of Policy developed by the committee have served to guide the responses to demands in problems of censorship, often resulting in dismissal of personnel. The committee has worked closely with the Intellectual Freedom Committee of ALA and the Freedom to Read Foundation in cases involving librarians in New York State. Recommending orderly procedure to govern selection of books in all libraries, conducting a "Right to Know" workshop, and holding outstanding sessions at annual conferences have been some of the activities of this committee. The committee took a strong stand on the report of the U.S.

Commission on Obscenity and Pornography and the passage by the state legislature of the Obscenity Law (Chapter 989 of the Laws of 1974). The implications of the law for libraries and librarians in the context of intellectual freedom will be of continuing concern for the committee. Because dismissal without cause has been the result of censorship of library materials, the Intellectual Freedom Committee has investigated many cases in the 1970s and has made recommendations for council action. The earliest case in which action was taken by the Committee on Tenure was in 1941, when a professional librarian was under criticism. The "Resolution on Due Process for College, Public and School Libraries Relating to Dismissal and Non-Reappointment" (7) was passed by the NYLA Council in 1971, and copies mailed to all chief school officers and library institutions in the state.

Throughout its history the council has been responsive to current issues and events. Ad hoc and standing committees have been appointed to study, make recommendations, and implement programs in such interest areas as:

> how to combat the dime novel habit (1895); the place of fiction and fairy tales in literature (1897); curriculum of library schools (1906); the radio and the library (1923); reading for penal and charitable institutions (1909); interracial service (1933); union list of newspapers for New York State (1935); National Defense Book Drive (1941); health education (1941); parent education (1939); the puzzle craze (contests by newspapers to build circulation) (1950); Crusade for Freedom (1951); educational television (1952); cooperative film service (1952); library buildings (1960); bookmobile services (1961); social responsibilities round table (1969); public relations (1971); member benefits (1973); bicentennial (1973).

The governance of the NYLA has evolved from an executive board of five in 1890 and is now delegated to the council, which is a policy-making and an executive body of the association. Council consists of the officers, two members elected at large, the president of each section, and one representative of the Library Trustees Foundation of New York State. Sections may be formed on petition of 25 members and approved at the annual business meeting. A full-time secretary-treasurer position was created in 1957. By 1970 the association's program required a full-time executive secretary and in 1974 the responsibilities of the office were more accurately described by the title, executive director.

The NYLA has seven sections within its structure: Adult Services, Children's and Young Adult Services, College and University Libraries, Library Educators, Public Libraries, Resources and Technical Services, and School Library Media.

The largest section in the NYLA is the School Library Media Section. A Committee on High School Libraries was appointed in 1908 to investigate conditions in the state and through its efforts a Library Section was established in the New York State Teachers Association in 1910. In 1915 the Council of the NYLA formed a Committee on Libraries and Schools for the "formulation of a definite plan of cooperation between the public library and school library interests in the State" (8). Programs of the annual conference from 1895 to 1910 list at least one session of interest to school personnel, such as the speaker at the evening session of the conference in 1895, who was the superintendent of Buffalo schools speaking

on "reading for the young with special regard to the influence of teachers" (9), and in 1900 when one of the principal topics of the conference was the public school and the public library. The NYLA repeatedly urged the regents to use their influence to amend the Education Law so that school librarians should have equal status and salaries with teachers. The Committee on Libraries and Schools was approved as a section in 1940, and held its first membership meeting in 1941. Since that time two meetings are held annually: a workshop in the spring and a fall meeting as a part of the annual conference of the NYLA.

The contributions of the School Library Media Section (SLMS) of the NYLA have been influential in librarianship and libraries of the schools of the state. SLMS has been active in the field of publications. Beginning in 1957 the "Standards Series" has included such titles as *Standards for the Book Collection in Elementary, Junior High School, and High School Libraries; School Library Objectives; The School Library's Teaching Program;* and *Housing the School Library.* The cooperative work with other segments of the school community prompted such publications as *School Librarian in the Guidance Program.* Because the Children's and Young Adult Services Section serves the same age group as the school library, joint sessions at annual conferences and publications such as *Working Together—School and Public Library* brought the programs of the two sections into harmony. Through the request of SLMS, the governor proclaimed School Library Media Day in New York State in 1973. The section provided each school librarian in the state with a kit of suggestions for programs to bring to the attention of the general public the significant contribution of library media centers in schools. Results of studies conducted by SLMS, such as the 1959 study of library skills needed by college students as they do research and prepare assignments, have led to across-library cooperation. The Legislative Committee of the NYLA has placed the proposed law requiring the inclusion of the schools' library materials, print and nonprint, in the contingency budget of the school district, a priority issue.

The Children's and Young Adult Services Section (CYASS) of the NYLA had its beginning in 1932 as the Children's Books and Libraries Committee. In 1951 the council approved section status for the committee and in 1959 the name of the section was changed to Children's and Young Adult Services Section. Conference programs from 1908 on include sessions on story-telling and children's services. Beginning with a page in the *Bookmark,* published monthly by the New York State Library, which highlighted the best in children's books past and present, CYASS has published pamphlets on a variety of subjects. *Once Upon a Time,* a pamphlet on story-telling techniques and programs for story hours, was circulated nationally, and has been followed by numerous publications on selecting the best of the multimedia and developing standards for work with children. The joint author luncheon with SLMS on Saturday of each annual conference is an outstanding program of the conference.

The College and University Libraries Section, formed in 1954, was originally the College Library Committee. The committee studied the "relationship of NYLA to other organizations offering programs for college and university librarians and

made recommendations for the future activities of NYLA in this field" (*10*). The recommendations included joint programs and meetings sponsored by NYLA and state or regional chapters of the Association of College and Research Libraries, and work on problems from the college and university point of view, such as tenure, faculty status, and projects of interest to the New York State Education Department. This section has cooperated with the state Education Department in its program to improve interlibrary loan service between the State Library and college libraries, preservation of library materials, establishment of 3Rs councils, and standards of service. The section urged the establishment of the Office of College Library Consultant in the state Education Department.

The Library Educators Section of the NYLA was granted section status in 1970. At each succeeding conference, programs of the section have centered on curriculum in library schools and methods of teaching.

The Adult Services Section of the NYLA was established in 1956 to replace the Adult Education Committee, first appointed in 1936. The early activities of the committee included bringing the American Heritage Project of ALA to New York State, exchanging reading lists among libraries, and the establishment of nine centers of experiment in nine typical libraries in the state. The program in the committee's publication outlining adult education work in libraries was updated by the section, which offered its services to help libraries conduct workshops on new standards. The publication, *Standards for Adult Services in Public Libraries*, was made available in 1973. The program on "education to replace censorship" (*11*) at the Middle Atlantic Regional Library Federation Convention in 1973 emphasized opportunities offered in this area by NYLA's Adult Services Section.

The Resources and Technical Services Section, evolving from the Technical Services and later Technical Processes Committee, was granted section status in 1959, to represent the technical services functions in all libraries. While still a committee, the group conducted a symposium on the participation of New York State libraries in the development of the National Union Catalog. Subcommittees on public documents, acquisition, catalog codes, serials and union catalogs, and paper preservation and restoration indicate areas in which this section has been active. A Preservation Conference in 1970 and 1-day workshops on the basics of preservation and book repair in 1972 have given members of the section valuable information.

The Public Libraries Section of the NYLA is the most recently formed section, receiving council and membership approval in 1971. The group is "committed to the goal of excellence in public library service . . . and full and easy access to information essential so that we may have a well informed and responsible citizenry" (*12*). The development of standards for all aspects of public library service will be a goal of the section. In 1973 an Outreach Committee was formed to develop pilot programs which will bring existing library services to the attention of potential users.

The NYLA maintains liaison relations with other library-oriented organizations. Among these is the New York State Association of Library Boards, known as the Library Trustees Foundation of New York State until 1973. A Trustees Com-

mittee had been an active group within the NYLA from its earliest history. In 1939, the council notified the Trustees Foundation that council would accept the officers nominated by the foundation as the Trustees Committee of the NYLA. The committee requested section status in 1932 but it was not until 1941 that the membership approved the request. The Library Trustees Foundation of New York State was chartered by the Board of Regents on February 25, 1949. The foundation was formed at the request of the NYLA Council in order to have trustees speak independently on legislation. This was termed a "temporary agency established for political expediency and that it is not to replace the Trustees Section of the NYLA but rather superimposed on it with identical officers" (*13*). By 1950, a committee was formed to investigate a merger of the Trustees Section and Library Trustees Foundation of New York State. The resulting action was the nomination of representatives of each group to serve on the governing bodies of each. In 1956, the section took action to abolish itself as a section of NYLA and join with the Library Trustees Foundation of New York State, because of members "feeling that their legislative influence is weakened if they are members of the NYLA" (*14*). Members of Library Trustees Foundation (LTF) of New York State were given the privilege of becoming affiliate members (nonvoting) of the NYLA and would receive the *NYLA Bulletin*. However, the member elected by LTF as a representative to the NYLA Council was a voting member of council. The Library Trustees Foundation of New York State has held annual meetings in conjunction with the NYLA annual conference and the film "Books for All" on county libraries was sponsored by the NYLA and the LTF. Regional workshops and institutes for trustees have been a part of the action program of the foundation. Cooperation between LTF and the Legislative Committee of the NYLA has led to the passage of the State-Aid-to-Libraries Bill, the establishment of county library systems, and the sponsorship of the 1972 legislative workshop.

The NYLA has not limited its interests to libraries and librarians within the state. In 1953 an Appointment of Foreign Librarians Committee was appointed to initiate an exchange program for qualified foreign and New York State librarians. The first exchange was with British librarians and the program has grown to place as many as 40 in 1 year in 10 different countries.

In 1967, 75 librarians from Canada, New York State, and Vermont attended a conference held in Potsdam, New York, to promote cooperative sharing of library resources with Canadian libraries located in the region adjacent to that served by the North Country's 3Rs council. In 1935, the NYLA joined with states in New England for a regional conference. In 1968 the Middle Atlantic Regional Library Federation (MARLF) was formed by Delaware, New Jersey, Pennsylvania, Maryland, West Virginia, and New York "for the purpose of mutual exchange of ideas and a jointly sponsored conference once in five years" (*15*).

In 1911 the first *Manual* of the NYLA was published to record the essential facts of organization for the use of the officers and members. The *Manual* has been revised periodically during the subsequent years. The report of the council and membership action, and all papers presented at conferences were printed in the

Library Journal during the early years. In 1922 council budgeted $50 to have *New York Libraries*, a publication of the state Education Department, mailed to each member of the NYLA. By 1927 council felt that the association should have an official organ for its membership to report news of association activities and action between conferences. The first issue of the *Newsletter* was published in 1927, to be followed by three issues per year, but there was some irregularity to the publication dates. The title and format were changed in 1953 and the February issue of the *NYLA Bulletin* contained excerpts from speeches at conferences, news of libraries, and personal news and notes. The *Bulletin* increased the size of the publication from 6 to 16 pages. The *Bulletin* contained advertising for the first time in 1962, to help defray publication costs. In 1965 the new cover design featured outstanding examples of library buildings recently constructed and the contents followed the format of a magazine, with articles on current issues as well as reprints of articles from other library magazines and reviews of current library literature. Beginning in 1969, the *NYLA Bulletin* was published monthly to keep the news timely and was limited to news in brief of the NYLA activities, including those of the council, its committees, and the sections. For several years sections had issued bulletins with information directed to the specific interests of the membership of the section. In 1971 the *NYLA Bulletin* was expanded to encompass all the newsletters and bulletins issued by all sections. This action was taken for two reasons: economy and the direct purpose of unifying the membership by keeping all members informed about the activities of all sections. The NYLA sections and committees have assumed the responsibility of reporting news to the editor of the *Bulletin.*

The decision was made by the council in 1957 to convert the NYLA from simply a program organization to one that would provide effective leadership to the whole profession at the state level, and that the association should direct its attention to the needs of users of libraries current and potential. This decision changed the action program to one of cooperative planning among librarians and with the bureaus and divisions of state government concerned with library service. This unification of effort has led to strengthening the effectiveness of the association. The membership has justification to believe that its elected and appointed officers are fulfilling the object of the association as stated in the *Constitution*, "to further library development and promote the profession of librarianship in the State of New York" (*16*).

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HELEN F. RICE

NEW YORK LIBRARY CLUB

The New York Library Club was organized at Columbia College at a meeting called by Melvil Dewey on June 18, 1885. Twelve librarians attended, only one of whom was a woman, Ellen M. Coe.

At its second meeting on November 12, Richard Rogers Bowker was elected president; Ellen M. Coe, vice-president; William Augustus White, vice-president; Charles Alexander Nelson, secretary; Jacob Schwartz, treasurer. Topics discussed at this 1885 meeting were: local cooperation of New York libraries, interlibrary loan, book thieves, and the disposition of duplicates. The first project undertaken was the preparation of a union list of periodicals in libraries of New York City.

The "purpose is to advance the interests of libraries and librarianship in Greater New York and vicinity" (*Constitution*, rev. 1968). Activities include several meetings each year at which there are speakers and discussions on matters of current library interest (organization, automation, services). Authors, editors, bookmen, and a variety of media-related people have graced the rostrum. The annual dinner/business meeting is considered to be the club's spectacular, as on April 28, 1966 Jean Stafford spoke on "Dangers of Truth in Writing Fiction."

A meeting of old and new members is the first event at a cocktail party each year.

Field trips are regularly planned to visit new libraries and others which have made innovations or which can provide some unusual or unique experience. Museums and historical landmarks have been featured. The spring field trip has a popular significance of seeing countryside as well as professional action.

To offer members an opportunity for foreign travel, the club's first charter flight went to London in the summer of 1961. There were five charter flights. The epitome of travel was achieved in a group flight to Japan, Taiwan, Hong Kong, and Hawaii in 1967 and to South America in 1968. A planned trip to the U.S.S.R. in 1969 did not materialize.

The club has been enthusiastic in promoting the interest of library school students in providing annual scholarship awards. Over the years there have been several plans for scholarship awards, with a yearly maximum of $2,000 depending on resources available. In 1971 all funds were allocated to a single library school, to rotate annually among five: Columbia, Long Island University at the C. W. Post Center, Pratt, Queens, and St. John's.

Membership represents the most universal which New York City has to offer. Anyone interested in libraries is eligible and encouraged. The annual dues are modest, currently at $7.50. It is the single organization, in the area, which prides itself with membership from all types of libraries: school, special, public, academic; as well as representatives from publishing firms, binders, audiovisual producers; and personnel from information and regional centers. The lack of restriction provides a complete professional mix.

Life members have paid the required dues according to constitutional provision. Other persons have become life members after retirement if they have been active members for 20 consecutive years. Honorary members are chosen for their interest and contribution to libraries by the discretion of the council.

Council now consists of an executive board: the president, vice-president and president-elect, secretary, treasurer, and past president; and 16 council members, four elected each year for 4-year terms. Each class of council member is to represent school, special, public, and academic libraries. On occasion library-related firms have been represented.

The roster of presidents reads like a "Who's Who." It has been indicated that R. R. Bowker was first in 1885. R. B. Poole (1887) preceded Melvil Dewey (1888) and Poole followed Dewey in 1889. Some other presidents were: Mary Wright Plummer (1896 and 1913); A. E. Bostwick (1897, 1898, and 1908); John Shaw Billings (1899); John Cotton Dana (1906); Harry Miller Lydenberg (1917);

Isadore Gilbert Mudge (1919); Keyes D. Metcalf (1933); Ernest J. Reece (1934); Jennie M. Flexner (1935); Francis L. D. Goodrich (1938).

There came: David H. Clift (1941); Wyllis E. Wright (1942); Morris A. Gelfand (1947); Marie D. Loizeaux (1948); Byron C. Hopkins (1949); Joseph Brewer (1951); Helen E. Wessells (1952 and 1953); Rose Z. Sellers (1954); Dorothy Cole (1955 and 1956); Lee Ash (1957); Harold Tucker (1958); Eleanor T. Smith (1959); Harold Ostvold (1960); Rice Estes (1961).

These presidents were followed by: Loda M. Hopkins (1962); Jack Ramsey (1963); Katherine Lord O'Brien (1964); James Humphry, III (1965); Bernard Kreissman (1966); Joseph N. Whitten (1967); Lillian Shapiro (1968); Margaret M. Kinney (1969); Edward deSciora (1970); Kirk Cabeen (1971); Henry Birnbaum (1972); Rita Rush (1973); Walter Roziewski (1974); Mary McNierney Grant (1975); and Alfred Lane (1976).

In 1894 the first *Manual* noted that procedure must be recorded and most such records have been placed on deposit in the Manuscript Division, The New York Public Library. The *Bulletin* has been continuous, although some years irregular, since 1912.

Concern and action were in evidence on "Library War Work in and around New York" in 1918 and again in the 1940s. Concentration was on services in hospitals, especially for armed services personnel.

Various well-known writers and public persons have been principal speakers. Some were: Andrew Carnegie, Hamlin Garland, Hendrik Willem Van Loon, Luther A. Evans, Jan Struther, Kay Boyle, Barbara Tuchman, Jean Stafford, Harold Cruse, Isaac Asimov, and Vincent Canby.

From time to time the club has participated in programs for librarians from many countries throughout the world.

There have been joint efforts with the New York Library Association, Special Libraries Association, and the American Library Association. Throughout the years, since 1885, the recurring theme has been on ways and means for library cooperation. The New York Library Club has, throughout its history, been a forum for libraries and information scientists to consider professional matters of major interest.

SOURCES

Based upon *Membership Directory of the New York Library Club, 1970.*

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Recent documents maintained by officers.

JOSEPH N. WHITTEN

NEW YORK METROPOLITAN MUSEUM OF ART LIBRARIES

See *Metropolitan Museum of Art Libraries*

NEW YORK METROPOLITAN REFERENCE AND RESEARCH LIBRARY AGENCY (METRO)

See *Metropolitan Reference and Research Library Agency*

THE NEW YORK PUBLIC LIBRARY

The New York Public Library (NYPL), located in the New York City boroughs of Manhattan, The Bronx, and Staten Island, is one of the largest and most accessible public library systems in the world.

The library is a tax-free, nonprofit, private institution incorporated in New York State for public service. It offers its materials and services to the general public without charge. NYPL is used by the 8 million citizens of New York City, in addition to the State University system. Forty-five percent of its total usage comes from out of New York State. As of 1974, the library employs approximately 3,000 persons in its various public service divisions and supportive units.

NYPL is currently governed by a board of 28 trustees (including the mayor, the president of the City Council, and the comptroller of New York City, ex officio). The library is administered by a full-time president, in conjunction with a director, the principal librarian. Of senior rank are also the Andrew W. Mellon director of The Research Libraries and the director of The Branch Libraries.

NYPL is a member of most regional, national, and international library associations. It is a member of the newly formed consortium known as the Research Libraries Group, comprising the university libraries of Harvard, Yale, and Columbia, and The Research Libraries of The New York Public Library.

History of NYPL

The principal roots of NYPL go back to 1848, when John Jacob Astor, the immigrant boy who built fur trading, tea, and New York real estate into the first of the great American fortunes, provided in his will for the establishment of a reference library and bequeathed $400,000 for its founding. In 1854, the Astor Library opened at Lafayette Place with 90,000 volumes strongly emphasizing languages.

Sixteen years later, in 1870, another reference library was established by James Lenox, a great collector with peerless holdings in the fields of American literature, folklore, and history, and Milton, Shakespeare, Bunyan, Walton, the Age of Discovery, and the Bible.

In 1895, the Astor and Lenox Libraries were consolidated with the Samuel Jones Tilden Trust. The Tilden Trust had been created in 1886 by the will of Samuel Jones Tilden, a former governor of New York State, for the establishment

of a "free library and reading room" in New York City. The consolidation formed The New York Public Library, Astor, Lenox, and Tilden Foundations.

The consolidated library was still wholly dependent upon gifts and the income from a relatively small endowment. On March 25, 1896, the city granted the request of the library's trustees to make available the site then occupied by the Croton Reservoir on Fifth Avenue between Fortieth and Forty-second Streets, and to construct on it at public expense a library building. Construction began in 1897, and in 1911 President Taft opened the central building with 1,200,000 volumes and 18 special subject reading rooms.

In 1901 Andrew Carnegie offered to provide building funds for branch libraries if the city would furnish the sites. The city enthusiastically accepted the offer, and the legislature empowered the city's Board of Estimate and Apportionment to provide "for the maintenance of a public library system in the City of New York." From that time on The New York Public Library, under charter to the City of New York, has been responsible for the operation of the publicly supported Branch Library System in Manhattan, The Bronx, and Staten Island. Consolidation of the system with the developing boroughs of Queens and Brooklyn was considered at the time of the Carnegie endowment. In 1901, the city decided that community needs were best served by the maintenance of three distinct systems of manageable size rather than one larger and more unwieldy institution. Since that time a system of cooperation has been established among the three systems for common concerns such as collection, staff rights, and budget presentation.

The Branch Libraries

Within its interborough network The New York Public Library has two kinds of facilities: circulating and research. The Branch Library System is the circulating arm of the library, lending books, periodicals, films, records, and pictures for home use. With more than 80 units plus six bookmobiles, its diverse materials are convenient and accessible to vast numbers of people. The branches range in size and depth of their collections from the smaller neighborhood facilities to the larger, strategically located Regional Libraries, to the Library Centers, the largest branches in each borough.

The regional library system was initiated in 1952 in response to recommendations by the City of New York, in order to promote better and more economical services by the maximum use of library material and staff. At this time three Library Centers were established: St. George, opened in Staten Island in 1952; Fordham in The Bronx, opened in 1954; and Manhattan's Donnell Library Center, opened in 1955. The Library Centers provide extensive reference, advisory, and lending services to their boroughs.

In addition, The Branch Library System offers a tremendous variety of programs and activities for people of all ages. Through its Office of Children's Services, the

NYPL provides wide-ranging collections and services ranging from an annual children's bibliography, to storytelling programs and books and records. The Office of Young Adult Services yearly prints *Books for the Teen Age*, a bibliography of books on subjects of interest to young adults. In addition, the library provides reading for study and pleasure, reference and advice, lectures and talks, and craft and skill workshops for teenagers.

The NYPL's Office of Adult Services provides a number of programs and resources for adults and senior citizens to further their continuing education. In addition to sponsoring book discussion groups, there are dramatic readings, concerts, lectures, and poetry readings. Increasingly, the NYPL has been a leader in providing its users with nonbook materials. Among the many nonprint items currently circulated are records and cassettes, films, filmstrips, and videotapes, and recently purchased items such as games, posters, and sculpture. The library also provides community meeting places, and a display area for local art and crafts.

Because New York City has large numbers of people for whom English is a second language, several branches have significant foreign-language collections. These include Chinese, Czech, French, German, Hebrew, Spanish, Polish, Ukrainian, and Yiddish. The Donnell Foreign Language Library, at the Donnell Library Center, has a major circulating collection representing the literature of more than 80 languages as well as substantial numbers of foreign reference books and periodicals.

THE MAJOR BRANCHES

Mid-Manhattan Library, 8 East 40th Street, New York 10016

The Mid-Manhattan Library, which opened in 1970, is the main library of the branch system. It provides a stock of ready reference and circulating materials designed primarily for undergraduate college students and business and professional users. In addition it provides a referral service to the scholarly and advanced materials available in The Research Libraries.

Mid-Manhattan has 375,000 books and 36,000 bound volumes of periodicals on open shelves, the largest selection of books and back-issue periodicals for home reading in the U.S.A. As the major reference center for The Branch Libraries, however, it keeps half of its collection for use within the building. Mid-Manhattan has four departments: General Reference Service, Science, History and Social Science, and Literature and Language.

The NYPL staff of branch librarians has produced some distinguished authors and editors. Augusta Baker, recently retired coordinator, Office of Children's Services, in addition to her renown as a children's specialist, was editor of the innovative bibliography, *The Black Experience in Children's Books*. She is also author of several collections of folk tales, including *The Talking Tree* and *The Golden Lynx*. Lillian Morrison, currently coordinator, Office of Young Adult

Services, is the editor of such collections as *Yours Til Niagara Falls, Sprints and Distances,* and *Best Wishes, Amen.* She is also author of books of poetry, including *The Ghosts of Jersey City.*

Donnell Library Center, 20 West 53rd Street, New York 10019

The Donnell Library Center, which opened for service in 1955, is named for Ezekiel J. Donnell, a successful cotton merchant who emigrated from Ireland to the United States. At the time of his death, he bequeathed an estate to be used for the construction of a building "in which young people can spend their evenings profitably away from demoralizing influences." The contemporary style four-story building, designed by the architectural firm of Williams and Embury, is situated in the Rockefeller Center area, across from the Museum of Modern Art. The facility offers extensive service to children and young adults, through its Central Children's Room and Nathan Straus Young Adult Library.

The Central Children's Room, with its 80,000 titles, includes the best in many foreign languages and an extensive collection of rare and old books.

The Nathan Straus Young Adult Library is devoted to serving the eighth grade through high school, its collection of books and magazines reflecting the current range and depth of teenage interests.

Donnell also houses large collections of circulating and reference books for adults. Its Art Library is the branch system's largest collection in the visual and graphic arts. Other of Donnell's specialized departments include the Film Library, Foreign Language Library, Record Library, and Reference Library.

General Library and Museum of the Performing Arts, 111 Amsterdam Avenue, New York 10023

Housed in The New York Public Library at Lincoln Center, this facility has excellent circulating collections in the performing arts. In addition to the Circulating Music Library, currently celebrating its 50th year of operation, materials are available in theater and dance, radio and television, and puppetry and the circus.

A representative collection of recordings is available for borrowing or playing at the library. A special children's section provides youngsters with their own collections of books on all phases of the entertainment world.

Library for the Blind and Physically Handicapped, 166 Avenue of the Americas, New York 10013

The collection of this library consists of more than 80,000 talking books (books and magazines recorded on disks and open-reel tapes, and books on cassettes), 3,500 tapes, and 12,000 volumes of braille. It is provided by the Library of Congress to people in New York City or Long Island who cannot see or handle materials in regular print.

Fordham Library Center, 2556 Bainbridge Avenue, New York 10458

This largest library in The Bronx has a strong general collection for circulation, a large collection of recordings, and a specialized one on education. The Bronx Reference Center, housed in the same building, has—in addition to basic reference tools—sizable holdings in business, local history, college catalogs, and civil service and vocational information and periodicals.

St. George Library Center, 10 Hyatt Street, New York 10301

Staten Island's largest library, in addition to an extensive general collection, has sizable holdings in education and large print books and a fine record library with listening facilities. The reference collection is also excellent.

Picture Collection, 42nd Street and Fifth Avenue, New York 10018

The library's Picture Collection operates like a regular lending branch, in addition to maintaining vast reference files. The collection has a core of nearly 2,000,000 printed pictures, specially classified and indexed by subject, and a reserve stock of over 5,000,000 items. An outstanding feature of the collection is that the pictures are "sourced"—that is, each one has a key indicating where it was clipped from.

Bookmobiles

Bookmobile service is provided on a regularly scheduled basis in certain areas of The Bronx and Staten Island which are remote from a branch library. Books for people of all ages are brought by NYPL's six bookmobiles, and requests for books may be given to the librarian.

BRANCH LIBRARY CATALOGS

The Branch Library System put a *Book Catalog* into effect in November 1972, supplanting the traditional card catalogs for all materials added to the collections since that date. (Mid-Manhattan Library and several new branches have no card catalogs.) The Branch Libraries' *Book Catalog* treats titles, authors, and subject headings in separate volumes labeled "Titles," "Names," and "Subjects." Children's books acquired since June 1972 have their own *Book Catalog* of titles, names, and subjects. Both adult and children's *Book Catalogs* are updated by cumulative monthly supplements.

The Research Libraries

There are 23 research libraries, divided into four Research Library Centers, all of which are located in Manhattan. Among them, these archives house approxi-

mately 5,000,000 volumes and 10,000,000 manuscripts, with materials in more than 3,000 languages and dialects.

The collections of The Research Libraries are suited mainly to the needs of scholars, advanced students, and specialists. Research library materials do not circulate, but must be used within the library buildings. Over 40% of The Research Libraries' holdings are one-of-a-kind items.

The Central Building, Fifth Avenue and 42nd Street, New York 10018

The central building, designated a national and New York City landmark, is one of the world's great archives. It is home to all of The Research Libraries' Special Collections and most of its regular research divisions.

Characterized as beaux arts style, the central building was designed by architects Carrère and Hastings, in conjunction with John Shaw Billings, the library's first director. The neoclassical ornamentation and facade are in marked contrast to the extreme functionality of the building, which reflects the contributions of Billings' insights as a librarian. Built mainly of Vermont marble, the building, opened in 1911, shows the finest work of craftsmen of that day. Patience and Fortitude, the two famous lions doing sentinel duty at the Fifth Avenue entrance, were carved of pink Tennessee marble by E. C. Potter and are the symbol for NYPL.

Humanities and Social Sciences Research Center

American History Division: 125,000 volumes encompassing the history of the New World (both North and South America); noteworthy collections on U.S. history, Black American history, and history of the Indians of the Americas.

Art and Architecture Division: One of the world's largest collections of history and design in the fine and applied arts. Major resources are the alphabetical clipping files on artists and institutions, such as galleries, museums, and government agencies.

Economic and Public Affairs Division: One of The Research Libraries' largest divisions, with over 1,000,000 volumes. Holdings are particularly strong in finance, advertising, marketing, labor, demography, government, and government documents from hundreds of nations.

General Research and Humanities Division: This division has the largest number of subjects under its jurisdiction, including general reference works, anthropology, archeology, bibliography, biography, history (except Western Hemisphere), languages of the world (except those found in the Slavonic, Jewish, and Oriental Divisions), philosophy, printing, publishing, psychology, religion, and sports. The division also administers the Public Catalog, which lists most of the millions of holdings of The Research Libraries.

The Periodicals Sections of this division collects periodicals of all types, in English and foreign languages, periodicals of the humanities, popular and professional

journals, and the publications of trade and labor unions. Noncurrent periodicals, bound in volumes, are available in the various subject divisions.

Jewish Division: The collection consists of material on the Jews in all phases of their life and history in all languages, and works in Hebrew, Yiddish, Ladino, and other Jewish dialects, on a variety of subjects.

Local History and Genealogy Division: The collection includes the histories of counties, cities, and towns in the U.S., the British Isles, and the Republic of Ireland; family histories, with emphasis on American families of European origin, as well as detailed records of immigrant waves to the U.S. in the 19th century.

Map Division: This most-used map room in the world collects every conceivable cartographic item, from rare early American and European maps to current road maps. The Map Division was a source of information for the U.S. defense effort during the Second World War, through its extensive topographic and political maps of Europe. Asia, and the Pacific. The collection includes books and periodicals on the history and making of maps.

Oriental Division: The division collects materials throughout a large portion of the earth, stretching from Morocco to the shores of Japan. Literature, religion, history, and many other subjects are here in tongues ranging from Chinese to Kazak. Grammars and dictionaries of Oriental languages are an outstanding feature of the collection.

Slavonic Division: Covers Slavonic and Baltic languages. It houses books, magazines, and newspapers in any of these languages as well as materials, regardless of language, relating to Balto-Slavic languages and literature.

Special Collections

Certain rare and unusual materials held by The Research Libraries are known as the Special Collections. These are to be found in the central building, and admission to them is restricted to those who can prove that their research requires them to work with these materials, and to graduate students engaged in degree programs of graduate study.

Arents Collections: Two separate collections, founded and endowed by George Arents, Jr. The first, the Tobacco Collection, consists of printed works, manuscripts, and other rare materials, from 1507 to the present, concerned directly or indirectly with the history of tobacco. The second, the Collection of Books in Parts, is a collection of works originally published in serial form.

Berg Collection of English and American Literature: One of America's most celebrated holdings of first editions, rare books, autograph letters, and manuscripts. The collection covers the entire range of English and American literature, with emphasis on the 19th and 20th centuries. It was presented to the library in 1940 by Dr. Albert A. Berg, famous New York surgeon, in memory of his brother, Dr. Henry W. Berg.

Manuscripts and Archives Division: Highlights of this collection include 5,000-

year-old Babylonian clay tablets, the "Farewell Address" in Washington's own hand, the Mencken papers, and much more. Emphasis in recent years has been on building collections that reflect American social history.

Prints Division: An excellent representation of original prints from the 15th century to the present, supplemented by reference books and catalogs on individual printmakers, as well as literature on the history and techniques of printmaking. The division has some 15,000 original prints.

Rare Book Division: The chief subject is Americana, particularly before 1800, the nucleus of which is the James Lenox Collection. Early Bibles, Shakespeare, Walton, Milton, and Bunyan are among the treasures here. Also housed here are the following large categories of printed materials: European before 1601, English before 1641, and American and Latin American before 1801.

Spencer Collection: The collection was created by the bequest of William Augustus Spencer of his own treasury of books and an endowment fund to form a collection "representative of the arts of illustration and bookbinding" of any country and in any language. It now ranges from illuminated manuscripts on through the history of printed books, from incunabula through the successive periods of woodcut, engraving, etching, and lithography, as well as books illustrated in any of these media by contemporary artists.

The Annex, 521 West 43rd Street, New York 10036

This unit of The Research Libraries houses the Newspaper Collection and the Patents Collection, as well as less frequently used reference materials from the general collections.

Newspaper Collection: Contains back issue journals of many American and foreign cities. Microfilmed issues of current journals are available a few months after publication.

Patents Collection: Second only to that of the U.S. Patent Office, the collection has complete bound files of U.S. patents from 1872 to the present and complete up-to-date files for many foreign countries.

Science and Technology Research Center

This is an outstanding collection in the pure and applied physical sciences, with over a million book and nonbook items from all countries and in all languages. Long runs of technical periodicals, files of government documents, and proceedings of congresses and conferences are collected in profusion. Since an excellent medical collection is located near the library, NYPL does not attempt to duplicate clinical or highly technical works written for the medical profession. For these materials, readers are referred to the New York Academy of Medicine Library, a private library for adult reference use.

The Schomburg Center for Research in Black Culture, 103 West 135th Street, New York 10030

Currently celebrating its 50th year, the center began in May of 1925 as the library's Division of Negro Literature, History and Prints, a collection established by 135th Street Branch Librarian Ernestine Rose. In 1926, the division was augmented by the distinguished private library of Arthur A. Schomburg, a Puerto Rican of African descent, interested in documenting the history and culture of Black people throughout the world. In 1941, a new and modern library was opened adjacent to the original building in the heart of Harlem, to house the library's circulating collections. It was named the Countee Cullen Regional Branch, in honor of the famous Black poet who was a neighbor and warm friend of the library.

The research collections of the Schomburg Center, currently housed in the former 135th Street Branch building adjacent to Countee Cullen, are among the most complete and important archives of the Black experience in the world.

Materials range from rare documents and manuscripts to a file of current happenings and world events. Also included are periodicals from all over the world, books, photographs, broadsides, and recordings. On January 1, 1975, a contract was signed with an architectural firm to design a new building to house the collection, to be located near the present site.

Performing Arts Research Center, 111 Amsterdam Avenue, New York 10023

The center is located in a splendid Saarinen-created building at Lincoln Center. The facility has tremendous depth in nearly every area of the performing arts and is intended primarily for the professional, advanced student, and specialist. It is divided into the Theatre Collection, the Dance Collection, Music Division, and Rodgers and Hammerstein Archives of Recorded Sound.

Theatre Collection: Ranges over every phase of theatrical art and the entertainment world. The American stage and screen (1870–1920) are admirably covered in the Robinson Locke Collection of Dramatic Scrapbooks. The Hiram Stead Collection covers the British theater between 1672 and 1932, and the Parisian stage of the 18th and 19th centuries is the subject of the Henin Collection. A collection of Theatre on Film and Tape is being developed to record visually all types of current theater.

Dance Collection: The world's largest, most varied archive devoted solely to dance. Every aspect of dance is covered and every type of dance is documented. The Jerome Robbins' film archive has over 1.5 million feet of dance film.

Music Division: Hundreds of thousands of musical scores and books on music; sheet music running into the millions. Several thousand pieces of music written in America before 1800 are housed here, along with an excellent collection of popular music since 1890. Many important manuscripts are available in the collections.

Rodgers and Hammerstein Archives of Recorded Sound: This is The Research Libraries' repository of recorded sound, comprising over 200,000 recordings—mostly disks, but including reproducible sound in all its media. There are rare and unusual archives of oral history, early radio, and sacred music.

RESEARCH LIBRARIES' CATALOGS

By the early 1970s rapid growth of research collections had convinced the NYPL that its card catalog system would be inadequate to the needs of the coming decade. Accordingly, on January 1, 1972, The Research Libraries card catalog was officially closed, and all subsequent titles were included in a computerized, photo-composed dictionary *Book Catalog.* As a result, all titles with 1972 imprint dates, and all other materials added to the collections since January 1, 1972, regardless of publication dates, are included in the *Book Catalog* and do not appear in the card catalogs. Listings are made in three categories: authors, titles, and subject headings. The catalog includes books in all languages, with non-Roman alphabets appearing in romanized form. It also includes entries for books of maps, manuscripts in microform, and books of prints.

A central computer system has made possible the production of a similar catalog system for The Branch Libraries and provides for future centralization of bibliographic information.

Public Catalog: At this writing the Public Catalog, with over 10,000,000 cards, continues to be The Research Libraries' primary tool for retrieving materials. A dictionary catalog with author, subject, and distinctive title entries filed in a single sequence, the catalog lists items cataloged for The Research Libraries to the end of 1971. These include books, periodicals, government documents, pamphlets, and microfilms using the Greek and Roman alphabets. The Public Catalog is located in Room 315 of the central building.

Divisional Catalogs: Each subject division of The Research Libraries has its own card catalog. Materials listed in these are also listed in the Public Catalog. Some divisions also maintain special files and indexes of fugitive or ephemeral materials found there, and these are not duplicated in the Public Catalog.

Special Collections Catalogs: The Special Collections maintain their own catalogs, and listings of the bulk of their holdings up to the end of 1971 do not appear in the Public Catalog. However, all books added to the Special Collections since January 1972 are included in the *Book Catalog* of The Research Libraries.

Publications

NYPL produces a number of publications each year. Its Editor's Office regularly publishes a scholarly *Bulletin,* annotated bibliographies on various subjects, and catalogs for major library exhibitions through special funds. Notable is the recent publication of the *Collected Piano and Vocal Works of Scott Joplin.*

NYPL also copublishes works with major publishing firms. The Science and Technology Research Center produces a bibliography of *New Technical Books,* and a number of publications are produced by the Office of Public Relations, including a quarterly *Newsletter.*

Funding

As of fiscal 1974/75, funding for NYPL comes from a combination of the following public and private sources.

Branch library funding is 80% New York City; 14% New York State; 3% U.S. government (special programs for the disadvantaged); and 3% fines, gifts, grants, etc.

Operating costs for The Research Libraries and related operations for the fiscal year 1974/75 are supported by the following anticipated sources:

New York City, 15.5%
New York State, 19%
U.S.A. grant, 3%
Fundraising from private corporate, foundation, and individual sources, 12.5%
Endowment income, 19%
Special purpose income and gifts, 15.5%
Endowment principal (deficit), 15.5%

Usage

The NYPL is used by over 7 million people a year. In The Research Libraries, 15% of use is by readers from other states and foreign countries, 30% is by out-of-town residents of New York State. The remaining 55% of usage is by residents of New York City.

The NYPL is also widely used by business and professional people from a varied number of fields. In addition to consultation at local branches, the Mid-Manhattan Library and The Research Libraries are an indispensible resource to the business community. Chester F. Carlson, inventor of the electrostatic copying process, Edward Land of Polaroid Corporation, and technical artist and writer Willy Ley are only a few of the many users of the Science and Technology Research Center. Journalists like Tom Wolfe and Gloria Steinem depend on the library for ready information. A number of important works of fiction and nonfiction were written in the library, including Betty Friedan's *The Feminine Mystique* and Theodore H. White's *Making of the President* series.

Also heavily used is the Performing Arts Research Center of the NYPL at Lincoln Center. Noted producers, designers, actors, and directors from all over the country regularly consult the collections. The center is also a ready source of reference material to the other institutions at Lincoln Center for the Performing

Arts—the Metropolitan Opera, New York State Theater, and the Juilliard School. Hundreds of thousands of people use the NYPL General Research and Humanities Division, including the current authors of the "Believe It or Not" news feature.

JOHN MACKENZIE CORY

NEW YORK. STATE UNIVERSITY OF NEW YORK (ALBANY), SCHOOL OF LIBRARY AND INFORMATION SCIENCE

See *Albany. State University of New York, School of Library and Information Science*

NEW YORK. STATE UNIVERSITY COLLEGE OF ARTS AND SCIENCE, SCHOOL OF LIBRARY AND INFORMATION SCIENCE. GENESEO

Background

The State University College of Arts and Science and the School of Library and Information Science share a long, distinguished, and interesting history.

> As it moves northward from the gorges of Letchworth, the Genesee River slows its headlong rush towards the Lake Ontario and begins to wander majestically through a broad rich valley. Here, in the heart of this valley, is Geneseo.

This is how the proud burghers of the community describe the idyllic setting of the village (*1*). The description tends to belie the dynamic role Geneseo has fulfilled for almost two centuries in the social, political, and cultural life of the Genesee Valley. And yet, while keeping pace with the times and hosting a modern center of learning, this community just a few miles south of the City of Rochester has retained the charm and beauty that has been its pride since 1789 when Geneseo's first settler Lemuel Jennings arrived from Connecticut.

Some prefigurations of a college and a program in library education at Geneseo date back to the years following the American Revolution, when efforts were made to establish a state normal school and a school district library system in the upstate New York area. Yale-educated James Wadsworth, a land agent in charge of a vast track of former Seneca lands, called the Phelps and Gorham Purchase, settled in the Genesee Valley and became a determined lobbyist for the cause of education

for the masses (2). As early as 1796, Wadsworth urged the establishment of common schools. In 1826 he canvassed the state legislature for the organization of county academies for the education of school masters. In 1836, in a letter to Governor Marcy, he advocated the creation of school libraries in every district of the state (3). As soon as laws were passed on common schools and school libraries, Wadsworth began his fight for the establishment of a state normal school in Geneseo. The school was actually created by an act of the New York State Legislature in 1867 and opened its doors to students on September 13, 1871 (4).

From the very first year of its existence, the Geneseo Normal and Training School followed the developmental patterns typical for the young U.S. system of higher education. The initial curriculum offered three choices: Elementary English, Advanced English, and Classical Studies—representing 2, 3, or 4 years of academic work, respectively. However, these studies were a combination of precollege and college level work (5).

The year 1905 marked the first reorganization of the curriculum; precollege level studies were eliminated and a 2-year course was introduced. In 1922, the curriculum was lengthened to 3 years, and in September 1935, a 4-year integrated curriculum for the preparation of teachers and teacher–librarians was inaugurated. In 1939, the success of this program brought to the Geneseo State Normal School the authority to grant the first B.S. degrees to teacher–librarians. By the fall of 1939 all courses available at Geneseo were full 4-year programs.

In 1942, the authority to grant B.S. degrees was extended to all curricula and the Normal School became the Geneseo State Teachers College.

By legislative act in 1948, the college was added to the newly created State University of New York, with the authority to confer Master of Science degrees in Education. The first M.S. degrees were awarded in 1951. During the 1960s two new programs leading to the Bachelor of Arts degree with major in a designated subject area and the Bachelor of Science degree in a designated subject were inaugurated. The identification of the college as a State University College of Education in 1959, and later as the State University College of Arts and Science reflects this change and also is indicative of a growing commitment to liberal arts education. The introduction of the new curriculum also points at a transition from a single-purpose to a multipurpose institution.

Graduate-level studies offered at Geneseo lead to the Master of Arts degree in eight subject areas, to the Master of Science degree in five fields and, of course, to the Master of Library Science degree.

Early Programs in Education for Librarianship

Right from its inception, the growth of the library education program has been intertwined with the development of other academic programs of the college.

Ever since 1906, when Ida M. Mendenhall (1906–1912 and 1915–1918), the newly appointed head of the Library Department, offered her first course of study in library methods, Geneseo has been actively involved in education for librar-

ianship. In fact, it was one of the three pioneer normal schools in the U.S. to develop a program for the preparation of teacher–librarians.

In August 1909, the Board of Regents of the University of the State of New York formally authorized the establishment of a course in library education at the State Normal School. Ida Mendenhall's initial curriculum listed three courses: Administration of Small School Libraries, Children's Literature, and Practice Work. The first class consisted of one student, Hazel Kilian of Utica, New York.

However modest this curriculum might have been, its success served as inspiration for all those who believed in the new role libraries were to play in normal schools throughout the nation. Encouraged by the results of her experimentation, Ida Mendenhall embarked on a campaign for a wider acceptance of the concept of library instruction in normal schools, the use of the library as a laboratory, and the training of competent school librarians (6). Using the special "School Library Number" of the *Wilson Library Bulletin* as a platform—an issue prepared by her for the 1917 Annual Conference of the American Library Association—she wrote:

> An elective teacher–librarian course of two years, specializing in English or history and library work, has a distinct place in the modern normal school. The graduates of such a course are prepared to do departmental teaching of English or History in the upper grades or in [a] small high school, and, in addition, to organize the school library, select books, conduct a "story hour" for children, give library lessons on the use of books, conduct a "library hour" for each grade . . . (7).

And this is exactly what the early Geneseo program in library education was designed to achieve.

By 1912, when Ida Hemans (1912–1915) was appointed to direct the work of the Library Department, subjects covered by the program included classification, cataloging, book selection, reference work, "mechanical processes," children's literature, story telling, and library practicum. In 1912 the first students to be certified as teacher–librarians graduated from the program.

The years immediately following World War I were marked by a sharp increase in the enrollment and a gradual move toward a degree program. Much of the credit for this progress is due to Mary C. Richardson (1918–1941). Under her tenure as director of the Library Department—a peculiar combination of three units: the Normal School Library, the School of Practice Library, and the Department of School Library Science—the original few training courses for teacher–librarians were expanded first to a 16-hour curriculum within a 3-year undergraduate program (1929), and later to a 32-hour curriculum offered in cumulative summer sessions (1932). This same program was given during the regular academic year for the first time in 1934–1935. A new 4-year, 36-semester-hour program was introduced during the year 1935–36.

In 1939 Geneseo was given the authority to confer the Bachelor of Science degree. The first degrees of B.S. in Education with specialization in Library Science were awarded in 1940 to graduates from the 36-hour program. Thousands of

students earned this degree between 1940 and 1954 as majors in a "dual" program or, between 1955 and 1970, in the "single" program.

A typical 4-year, 36-hour integrated curriculum offered by the Department of Library Education during the late 1930s and early 1940s consisted of the following courses:

Course Number	Course Title	Semester Hours
Book Arts Courses		
Lib. 101–2	Reading Course in Children's Books	6
Lib. 303	Book Selection and Reference I	3
Lib. 305	History of Books and Libraries	2
Lib. 401–2	Book Selection and Reference II	5
Courses in Technical Organization		
Lib. 201	Introduction to Librarianship	2
Lib. 203–4	Classification and Cataloging	5
Lib. 302	Library Practicum	6
Course in School Library Service		
Lib. 301	Reading Guidance	4
Course in School Library Administration		
Lib. 304	School Library Administration	3
	Total Semester Hours	36

As Librarian and Director of Library Education, Mary C. Richardson successfully built on the foundations laid down by Ida Mendenhall. She not only strengthened and further developed the Geneseo program in library education, but also continued the relentless struggle for the acknowledgment of the role of libraries in the educational process of normal schools throughout New York State and the nation. In some respects Mary C. Richardson was far ahead of her time. For instance, as early as 1918 she forcefully argued for the granting of faculty status to librarians and academic status to library departments. In one of her papers on the relationship of the academic institution and the library she wrote:

> Long ago we have discovered that size has very little to do with the efficiency of a library. The first essential is the librarian. And by that I do not merely mean someone who has been to a library school. *The library department must be on equal terms with all the other departments in the school. The requirements of the librarian should be as broad as those of the heads of other departments.* A school librarian needs to be a college graduate, a normal school graduate, an experienced teacher, a library school student and a librarian to have an ideal equipment . . . (8).

Although the faculty of the library program in the early years numbered only a handful, without their contribution the establishment and success of the undergraduate program would have been unimaginable. In addition to the first three

directors, who were also involved in teaching, the roster of the regular session teaching staff active during the period 1906–1941 included

Rachel Benson Bailey (1917–1919), Frances Baker (1928–1959), Florence Damon Cleary (1918–1920), Dorothy Curtiss (1925–1927), Bessie Eldridge (1919–1920), Castella Hees (1923–1924), Hazel Kilian (1911–1916), Martha Pritchard (1917–1918), Alice Damon Rider (1920–1961). Helen Russell (1922–1923), Ruth Schwingel (1935–1936), Lucille Van der Meid (1930–1931), C. Elta Van Norman (1932–1961), and Rachel Woodworth (1928–1929).

Upon the retirement of Mary C. Richardson in 1941, Neil C. Van Deusen (1941–1948) became head of the Department of Library Education. His tenure was marked by further strengthening of the 36-hour B.S. program, the inauguration of regular sequential summer sessions as an alternative to the 1-year and 1-semester approach to studies toward the B.S. degree, and by the accreditation of the program by the American Library Association (ALA).

Since July 1, 1942, when the Normal School was granted the status of a State Teachers College, a reclassification of the teaching staff and the corresponding change in salaries have further strengthened the status of the faculty of the department. Steps were taken to separate the College Library staff from the teaching staff of the department, and the courses of instruction offered by the librarians of the School of Practice Library for teachers in training were clearly divorced from the curriculum of the department.

Dr. Van Deusen's tenure is also marked by the initiation in 1941 of the Annual Summer Library Conference series. Book and Author Days, workshops, and lectures were featured. Those in attendance chose the topic to be keynoted at the conference the following summer.

The World War II years brought about the gradual emergence of a 36-hour program of "library specialization" for graduate students. Successful participants received a permanent library certificate and the degree of B.S. in Education. Courses offered in this program were identical to those taken by undergraduates. In order to meet the special needs of those employed during the academic year, a five-summer-session sequence of courses comprising the total 36-hour curriculum was developed and offered.

Although the years of World War II caused some fluctuation in the enrollment—in the year 1942–1943 only 91 students took library science courses—during the last year of Dr. Van Deusen's tenure the department listed an all-time high enrollment of 173.

Ever since the 1924 visit and the 1927 accreditation of its 16-hour program as a Summer Session Course, Type 3 by the Board of Education for Librarianship of the ALA, Geneseo was actively striving toward the development and accreditation of a full-fledged 36-hour B.S. program. When in 1939 the Board of Regents of the University of the State of New York authorized Geneseo to confer such degrees, renewed efforts were made to secure the accreditation of the program, which now

comprised 36 semester hours of work in the field of library science. In June 1946, the accomplishments of the department and the quality of the program were recognized by the Board of Education for Librarianship. The granting of a Type III accreditation made Geneseo one of 37 library schools and departments in the U.S. and Canada to achieve this distinction.

In 1950 the Department of Library Education became a division of the college and the head of the department assumed the title of director.

The late 1940s and the 1950s witnessed commendable experimentation and innovation in the area of curriculum. Soon after the appointment of Alice Damon Rider (1948–1961) as head of the Department of Library Education, planning for a graduate-level program began. In 1949 a 5-year program leading to a M.S. degree in Education with specialization in librarianship was inaugurated. The first M.S. degrees were awarded to students graduating from this program in 1951. In 1954 approval was granted for a graduate program to train public librarians. By 1957 there were three graduate-level programs in operation: Program No. I (School Librarianship), for graduates of accredited colleges with some prior education in librarianship, 32 semester hours; and Program No. II (School Librarianship), 36 semester hours, and Program No. III (Public Librarianship), 32 semester hours, both for graduates of accredited colleges without prior education in librarianship (9).

At the beginning, these graduate programs were available in Geneseo only during the summer sessions, and in the resident centers at Buffalo, Rochester, and Elmira during the academic year. In September 1959 Program No. IV (School and Public Librarianship) was announced. This 36-hour, full-time, tuition-free graduate program was designed to serve the needs of resident students at Geneseo. One full academic year and an 8-week summer session were needed for the completion of all course and field work requirements (10). The new program, with its incentives, was introduced primarily to meet the manpower needs of the hard-pressed libraries of New York State.

Responding to the call for more academic librarians, in 1961 Geneseo introduced a College-Library-Assistantship Program for the education of librarians for the colleges of the State University of New York. This program had the following components: (1) three 8-week resident summer sessions on the Geneseo campus; (2) two academic years of supplementary study and full-time work in the libraries of the participating institutions. The College-Library-Assistantship Program, with an initial enrollment of six students, was soon phased out and was absorbed by the standard graduate programs of the division.

The late 1950s and early 1960s witnessed a new trend which took the program in librarianship to various areas of upstate New York. Extension courses were offered by the division in Rochester, at the Rochester Public Library, in Elmira, and in Buffalo. In September 1961, the Buffalo Institutional Branch was established, with Dr. Leslie I. Poste as the Geneseo representative and coordinator of the branch.

While the staff of the division was hard at work teaching on campus and in the extension centers, and guiding students through the maze of courses in four different programs, Division Director Alice Rider was involved in a determined campaign for the adoption by the Committee on Accreditation of the ALA of special rules and standards which would accommodate single-purpose undergraduate programs geared principally for the education of school librarians (*11*). Her efforts failed, however, and in 1957 the division decided not to apply for reaccreditation under the ALA *Standards* then in force.

The roster of faculty members who lent their support to Dr. Van Deusen and Dr. Rider during these years of extraordinary growth of the program (1941–1961) included

> Linda M. Bretz (1959–1961), Doris Cole (1958–1959), Alice Fedder (1951–1952), Edna L. Haas (1943–1948), Edna B. Mack (1958–1973), Mary Helen Mahar (1956–1957), Lucille Menihan (1949–1952), Josephine M. Mills (1960–), Irene Mullie (1953–1954), Kathryn Parke (1948–1952), Leslie I. Poste (1958–), Richard C. Reynolds (1954–1966), Eva I. A. Schroeder (1959–1968), Eula T. White (1960–1976); and, of course, some of the senior members mentioned earlier, such as Frances N. Baker, Alice Damon Rider (later acting chairperson and director, 1948–1961), and C. Alta Van Norman.

Furthermore, the division was most fortunate to have the cooperation and support of the directors of the Rochester and Buffalo Public Libraries and the help of a number of professional librarians in the Rochester/Buffalo and Elmira/Corning areas. Harold S. Hacker and Joseph B. Rounds opened the doors of their libraries to students seeking opportunity for supervised field experience; they hosted most of the extension courses and also encouraged members of their staffs to participate in library instruction.

By the late 1950s, factors such as limitations imposed by the size of the faculty, the rigidity of the sequence of required courses, the realities of the wide geographical distribution of extension courses, a high attrition rate, and scheduling and advising difficulties all suggested that a radical revision of the somewhat overextended programs had been long due.

Although the revision and reorganization of the curriculum and programs were initiated by Dr. Rider, the actual changes were fully implemented by her successors, following her retirement in 1961. During the year 1961–1962, Dr. Edna B. Mack served as acting director, to be followed by a 2-year term of service of Robert L. Gitler (1962–1964), and another 2-year acting directorship of Robert T. Redden (1964–1966).

In the undergraduate area the so-called "dual" program was eliminated and, with the beginning of September 1962, undergraduates were admitted to a revised "single" certification program in library education. In the graduate area, during the years 1960 to 1962, Programs No. I, II, III, and IV were replaced by the new Program A and Program B. The first, a 32-semester-hour course, was designed for school librarians with bachelor's degrees and with undergraduate specialization in

Library Science. Program B was a full-time resident program offered to college graduates planning to become public or school librarians.

The first Master of Library Science degrees were awarded in June 1961, to students who had successfully completed Program B.

With the rapid growth of the college and its graduate programs during the 1960s, the climate and other ingredients needed for a strong graduate library school and program have also developed. Library resources have doubled, scores of new faculty and graduate students have brought their contribution to the academic and social life of the college, new facilities gave a strong impetus to the development of a sizable resident graduate student body, and, last but not least, the stimulating financial support given to academic institutions and libraries throughout the nation had created a market which was most conducive for the development of graduate-level library programs.

In December 1965, the Division of Library Education moved into its attractive new quarters in the Fraser Building, which also housed the College Library. Offices and classrooms, together with the nucleus of a special library collection, were secured for the division. The growing enrollment—in 1961 the division listed 249 undergraduate and 135 graduate students in the program—and the nationwide shortage of professional librarians soon led to plans to extend the curriculum to include preparation for academic librarianship. The need for development of courses in subjects such as computer applications in libraries, modern management techniques, automation, information storage and retrieval, and specialized bibliography was also considered. The implementation of these plans called for the recruitment of new specialist faculty members, higher admission requirements, and stronger library and media support. It also called for new leadership.

School of Library and Information Science

By 1966, when Bohdan Wynar (1966–1969) was appointed director of the division, the need for gaining ALA accreditation for the master's-level program became quite apparent. Decisions, such as the closing of the Buffalo Institutional Branch in 1966, the complete revision of the curriculum, the discontinuation—after September 1966—of admissions to the undergraduate program, and the curtailment of extension courses were the first logical steps to take. Administrative changes, such as the granting, in 1967, of school status to the division and the rank of dean to its director, were designed to strengthen the general standing of the program.

Major developments which had brought the program to the level recommended by the American Library Association *Standards of Accreditation* included the recruitment of several new specialists to teach courses in areas hitherto not covered by the curriculum, the development of a new M.L.S. curriculum with an impressive array of over 30 graduate-level courses, the initiation of a colloquium series, the establishment of a special library for the school in the fall of 1966 and a Data

Processing Laboratory in 1968, and the assignment of the Fraser Building in its entirety as the headquarters of the school.

In June 1968, the Committee on Accreditation of the ALA accredited the Master of Library Science Program of the school under the 1951 *Standards of Accreditation*.

New faculty who have joined the school during these years of transition and consolidation and have brought their expertise to the graduate program included

> Ralph E. Black (1964–), Donald D. Foos (1968–1969), Charles L. Higgins (1962–1963), John P. Immroth (1967–1969), Ivan L. Kaldor (1968–), John E. Kephart (1966–), Priscilla Lantz (1962–1967), Harold O'Neal (1961–1969), Elspeth Pope (1965–1966), Barbara K. Schaefer (1968–1969), and Marian L. Strickland (1966–1972).

John P. Immroth and Donald D. Foos also served as administrative assistants to the dean.

Upon the resignation of Bohdan Wynar in 1969, Ivan L. Kaldor was appointed to the position of chief administrative officer of the School of Library Science. The early years of his tenure were marked by the final elimination of the undergraduate library program and a further strengthening of the graduate curriculum in terms of scope and depth. Some areas such as academic and special librarianship were given particular attention, and both curricular changes and staff development reflected this new emphasis.

In 1970, a new program in music librarianship was announced. The year 1972 witnessed the inauguration of a program in biomedical librarianship. These two new areas of specialization, together with a continual development and updating of the school, public, and academic library programs, have called for the introduction of scores of new courses in such subjects as indexing, abstracting, contemporary international children's literature, computer applications, biomedical library and information service, music bibliography and research, mass communication, and studies in the multimedia. Program developments have been given full support in terms of physical facilities, library resources, computer access, and interdepartmental and interdisciplinary cooperation.

In response to an urgent need for continuing educational opportunities for professional librarians, in 1972 the school inaugurated a new Sixth-Year Specialist Certificate program. A series of 1-day institutes on library automation, information storage and retrieval and the Ohio College Library Center system (OCLC), extension courses, specialized colloquia, the annual Mary C. Richardson Lectures, the John Cotton Dana Lecture (1974), the Annual Rochester Seminar in Library and Information Science, and other events have been offered mainly with this same audience in mind.

The early 1970s also have brought about a significant change in the internal structure of the school. A process of decentralization and democratization of the administration culminated in the adoption of a *Governance*, a document which has established a committee structure, has secured student participation in policy

making, and also outlines means of protection of the rights of the faculty, students, and the staff.

In order to emphasize the new aspects of the curriculum and a new approach to education for librarianship for the 1980s and beyond, the name of the school was changed in 1971 to School of Library and Information Science.

The background and professional experience of new faculty members who joined the school during these years also reflect the changes in the scope of the program. This group of specialists included

> Miles M. Jackson, Jr. (1969–1976), Thomas W. Johnston (1970–1971), Charles A. Kritzler (1973–), Harry S. Otterson (1969–1974), Margaret F. Poarch (1973–), Paul A. Studer (1971–), Ruth T. Watanabe (1975–), and John H. Winkelman (1970–).

In addition to their teaching assignments, Harry S. Otterson and Charles A. Kritzler also served as administrative assistants to the dean and were in charge of student admissions. While Professor John Kucaba from the Music Department of the college served as the coordinator of the program in music librarianship, Janet Neese (1966–), who was in charge of the special library of the school since 1966, participated in the teaching of reference courses in the M.L.S. program.

In summer 1975, the Committee on Accreditation of the American Library Association reaccredited the Master of Library Science program of the school under the 1972 *Standards of Accreditation*.

Geneseo in the 1970s

PROGRAMS OF STUDY

The M.L.S. program is based on 36 hours of study at the graduate level. At the time of admission the applicant is encouraged to select two areas of specialization by type of library, for example, public/school, college–university/special, etc. A concentration within the type of library specialization may be focused on certain types of library work (for example, reference, technical processes, media, etc.). The school offers a large number of elective courses. They add flexibility to any program of study selected by students. Furthermore, within the field of special librarianship two major areas of specialization are also identified: music librarianship and biomedical librarianship.

Candidates planning to select music library specialization must have a strong academic background in music. Within their 36-hours work in the Master of Library Science degree program, they are required to take: (1) a minimum of two graduate courses in Music History (6 credit hours), (2) Music Bibliography and Research I and II (6 credit hours), (3) Practicum in Music Librarianship (3 credit hours), and (4) a period of supervised practical work in the College Music Library.

In compliance with the principles established by the Medical Library Association,

the biomedical librarianship program offers an introduction to biomedical bibliography, emphasizes the use of biomedical reference and research tools, and equips the librarian and the information specialist with the skills and knowledge needed for an effective participation in international biomedical information networks and services.

The program is based on the following combination of courses: Introduction to Biomedical Library and Information Service, Information Resources in the Sciences and Technology, Special Library Management, Studies in Documentation and Information Retrieval, and Theories of Indexing and Abstracting.

The Sixth-Year Specialist Certificate Program (S.S.C.) of Geneseo has been designed to accommodate the educational needs of working professional librarians. It is intended primarily for those interested in continuing their professional education at an advanced level. Utilizing an interdisciplinary approach, the program emphasizes the strengthening of specialized professional objectives in areas such as media, evaluation and measurement in management, information storage and retrieval, library automation, reading problems, micromaterials, innovative curricula, and school media center services.

The S.S.C. program offers in-depth advanced study with identifiable and distinct objectives. Although it is primarily for those wishing to continue their professional education with an emphasis on certain areas of specialization, the program may also accommodate candidates who plan to move into positions which call for higher qualifications than the master's degree but not for an emphasis on research as required for the doctoral degree. The final aim of the S.S.C. program is to strengthen the specialization of the individual and to provide the candidate with a program of greater depth and breadth than is possible at the master's level.

The requirements for completion of the program are set within the broad limits of 30 to 60 hours of academic work, culminating in a major contribution to the area of specialization, in the form of a published paper, project, or other presentation.

Participants in the S.S.C. program are encouraged to contribute actively to seminars; to enroll in specialized independent study courses, in field work, and in research projects; and, in some cases, to include internship or practicum in the program. Candidates may take courses at the master's and the doctoral level.

The S.S.C. program is not necessarily research-oriented but candidates are required to become acquainted with the research methods and tools in their particular fields of specialization. For this reason courses or work giving the candidate adequate opportunity to gain background in research methodology are considered parts of the program.

Formal applications to the program are accepted from those members of the library profession who hold a Master of Library Science or equivalent degree from a school with a program accredited by the American Library Association, and who have at least 2 years of professional experience in library work or in work in a related field. It is considered desirable that the students have some prior experience related to their proposed areas of specialization.

FACILITIES

The administrative offices and classrooms, the Professional Library of the School, as well as the Media, Cataloging, and the Data Processing Laboratories are located in the Bertha P. Fraser Building on the Geneseo Campus.

The collection of the Professional Library of the School consists of nearly 40,000 items of material relating to library and information science, printing, documentation, and juvenile and young adult books. Included in the collection are general reference and bibliographic tools, as well as reference works relating to library and information science. The library also collects technical reports, samples of rare books and fine printing, annual reports, surveys, and other material pertaining to the broad spectrum of library and information science. Tapes, records, slides, realia, computer-programming kits, and related hardware reflect a multimedia approach. Over 360 professional periodicals are currently received, including state publications and foreign journals. The bound periodicals total more than 3,500 volumes. A special section of the collection was inaugurated in 1974. It is devoted to the literature of business and science and technology. The library is open 70 hours a week, including nights and weekends. A staff of 15 is supervised by a professional librarian.

Keeping in step with modern developments in the field of management of libraries and information centers, the school has developed a Data Processing Laboratory. Equipped with a line of high-speed data processing equipment, the facility enables students to design, test, and implement data processing systems as applied to library and information center management. Active participation by students in the operation of the Data Processing Laboratory equips them with the skills necessary for the management of data processing installations, and with the firsthand experience needed for cooperation with larger automated systems—a key to the future development of library and information services. Computer terminals in the laboratory give students an opportunity to use the *Burroughs Programming Language* (BPL) in the interactive mode. Six remote terminals which are at the disposal of the school are connected with the IBM 360/70 computer of the State University of New York at Binghamton. These terminals offer access to *A Programming Language* (APL) for academic and research use. During the years 1972 to 1974 this facility was made available by a special grant of the National Science Foundation through which the School of Library and Information Science has become part of the New York Educational Computer Consortium.

In addition to the library and computer and media resources of the school and the college, libraries in the Metropolitan Rochester area contribute importantly to the programs of the school by cooperating in arrangements for field trips and field work, and by providing resource persons for classes and lectures. They also advise the school concerning further development of its program in library and information science. Some of the more significant libraries and library systems in the area are: the Rochester Public Library (over 890,000 volumes), the Pioneer Library System

(with 60 member libraries, serving a population of over 960,000), the University of Rochester Library (over 1,500,000 volumes), the Rochester Institute of Technology Library, the libraries of the Eastman Kodak Company and Xerox Corporation, and other special and research libraries.

LECTURES, CONFERENCES, AND COLLOQUIA

An outstanding speaker is invited annually to give the Mary C. Richardson Lecture, named in honor of Dr. Mary C. Richardson, former head of the Department of Library Education at Geneseo. Past lecturers were

> Dr. Louis Shores (1958), Mary Peacock Douglas (1959), Rutherford Rogers (1960), Dr. Thomas Hamilton (1961), Harriet G. Long (1962), Dr. Guy R. Lyle (1963), Dr. Luther H. Evans (1964). Dr. Samuel B. Gould (1965), Dan Lacy (1966), Dr. Harold Lancour (1967), Dr. Jean E. Lowrie (1968), Dr. Jesse S. Shera (1969), Dr. Marshall McLuhan (1970), Karl J. Shapiro (1971), Archibald MacLeish (1972), Julian H. Bryan (1973), Ralph D. Gardner (1974), and Dr. Ernest L. Boyer (1975).

The Annual Mary C. Richardson Lectures are traditionally published by the school. Cumulative volumes, each containing several of the lectures, are printed in the series *Geneseo Studies in Library and Information Science*. Other special lectures and convocations are held throughout the academic year.

Conferences and workshops are held annually on topics of special interest to librarians. These activities are designed as part of the program of the school and are offered as a means of continuing education of librarians.

During the 1967–1968 academic year, a colloquium series was initiated, primarily for the benefit of the student body of the school. The colloquium series is a part of the regular education program.

PUBLICATIONS

The School of Library and Information Science publishes *The Newsletter* to keep alumni and other friends informed about major events and new developments in the life of the school. *The Newsletter* is published three times a year.

The publication program of the school also includes the monograph series: *Geneseo Studies in Library and Information Science*. The purpose of this venture is to promote scholarly contributions to the field of library and information science by faculty, students, and alumni. Individual issues in the series may be research and philosophical studies, transcripts of memorial lectures, conference and workshop proceedings, translations, or student monographs of unusual merit. Some representative titles in the series are:

Kephart, John E., *Information Resources in the Humanities*, 2nd ed., 154 pp., 1974.

Kudlay, Robert R., and Joan Leroy, *Burroughs' Science Fiction, with an Analytical Subject and Name Index*, Illustrations by A. R. Canterbury, 236 pp., 1973.

Mary C. Richardson Lectures, 1958–1967, 126 pp., 1969.

Mary C. Richardson Lectures, 1968–1973, 105 pp., 1976.

Parity Now! Proceedings of a Conference on the Recruitment of Minorities into the Library Profession, Dallas, Texas, June, 1971, 102 pp., 1973.

Proceedings of the First Annual Government Document Workshop, Oswego, N.Y., May 24–26, 1975, 124 pp., 1976.

THE GRADUATE LIBRARY STUDENT ASSOCIATION

The Graduate Library Student Association (GLSA), formed to promote the intellectual and social experiences of the library students and to foster the ideals and goals of professional librarianship, is open to all students in the library and information science program at Geneseo. The president, vice-president, secretary, treasurer, and student representatives to faculty meetings are elected by the membership. Elected student representatives also serve on the Student Affairs Committee, the Curriculum Committee, the Admissions and Scholarship Committee, and on the Publications and Public Relations Committee of the school. The Student Affairs Committee acts as a liaison between the GLSA and the faculty and administration. It consists of three student members and three faculty members. The committee handles any and all problems which arise in student–faculty relations, academic standing, and areas of general student welfare within the School of Library and Information Science. Monthly meetings and special activities help toward the goals of the association. In addition to the *Informer,* published periodically, the association is actively engaged in an on-going faculty/course evaluation. Various events are sponsored throughout the year—such as field trips, parties, and colloquia. GLSA also sends two voting representatives to the campuswide Graduate Student Advisory Board which has initiated many changes on campus—especially in the area of greater graduate student autonomy. The main function of the association is a social one. By assuming that each student has a contribution to make, the GLSA has been able to help orient incoming students and rapidly make them an essential part of the school. The social functions sponsored are an excellent way to make friends and to get involved in the life of the campus and of the student body.

ALUMNI

The school has an alumni body of over 2,000. The Alumni Data Bank maintained by the school facilitates close contact with librarians who are graduates from the Geneseo program. One of the major means of communication is *The Newsletter,* which is published three times a year and mailed to alumni free of charge. This forum also serves as a sounding board for alumni input concerning curriculum, placement, new programs, and continuing education. Regular social meetings with alumni are organized during the annual conferences of the New York Library Association.

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IVAN L. KALDOR

NEW YORK. STATE UNIVERSITY OF NEW YORK AT BUFFALO, SCHOOL OF INFORMATION AND LIBRARY STUDIES

The School of Information and Library Studies (SILS) at the State University of New York at Buffalo (SUNYAB) has as its main objective the education of librarians for all types of library, media, and information centers through a program of study leading to the Master of Library Science (M.L.S.) degree. SILS is located

at the largest and most comprehensive of the state university units. With over 25,000 students and 1,500 faculty, SUNYAB offers a wide variety of undergraduate, graduate, and professional programs, all of them grouped under one of eight faculty divisions: Arts and Letters, Social Sciences, Education, Law, Engineering and Applied Sciences, Natural Sciences and Mathematics, Health Sciences, and Management. SILS is currently located within the Faculty of Engineering and Applied Sciences.

Established in the fall of 1966, the school operated on a preliminary basis during the academic years 1966–67 and 1967–68. During this period it absorbed many students who had begun their library science studies in the Buffalo extension program of the State University of New York College at Geneseo.

The fall of 1968 brought the implementation of a new curriculum and the first normal year of operation. This curriculum was reviewed and refined during 1970–71 and again during 1972–73 and 1974–75. In June of 1972, the school received accreditation by the American Library Association and was reaccredited in 1976.

The school's first executive officer was James Blackhurst, during 1966–67. Dr. Vincent Giuliano served as dean from July 1, 1967 to September 1, 1969. Provost Karl Willenbrock also served as SILS dean from September 1, 1969 through March 1970, when Assistant Professor Edward T. O'Neill of the SILS faculty became assistant dean and acting dean. He remained serving as assistant dean when Dr. George S. Bobinski was appointed dean on September 1, 1970.

The 1969–70 academic year was one of great uncertainty and turmoil in the school's history. This was also a year of unrest on the entire SUNYAB campus, as it was on many campuses throughout the country. There were rumors of SILS being phased out during this period, particularly since no search was in effect for a new dean. SILS students played a leadership role in convincing the SUNYAB administration that a dean should be appointed and the school be given a chance to prove itself.

While SILS may be considered a young school, having been recently established, it did have a predecessor at the University of Buffalo from 1919 to 1945. The University of Buffalo, established in 1846, was the name of the private institution of higher learning which was merged with the State University of New York in 1962 and became State University of New York at Buffalo.

Beginning in 1919, Augustus Hunt Shearer, a member of the University of Buffalo History Department and head of the Grosvenor Library in Buffalo, instituted the first library course and persuaded the university to establish a Department of Library Science, of which he became chairman. As most other library education programs in this period, the Buffalo Library Science Department had a very practical orientation with almost all of the courses taught by area librarians on a part-time basis. At first only a certificate was awarded. Later a 4-year degree program was instituted leading to a Bachelor of Library Science.

In 1940 Mr. Joseph Rounds was appointed as the first full-time assistant to Dr. Shearer. Very shortly, however, Dr. Shearer died and Mr. Rounds became director of the Library Science program as well as head of the Grosvenor Library.

During 1941/42 Mr. Rounds proposed that the university either provide the program a substantial increase in funding so that it could obtain accreditation or that it be terminated. Unfortunately, the university did not at that time have the resources and reluctantly did have to phase out the program. The last degree was awarded in 1945.

During the 26-year period of existence the Department of Library Science awarded 267 certificates and 174 bachelor's degrees. It had met the staff needs of local area libraries, though its graduates also went on to serve in libraries throughout the United States.

The postwar period brought increasing demands for librarians in the Buffalo area and a clamor for the establishment of a library school. As director of the Buffalo and Erie County Public Library System, Mr. Joseph Rounds was one of those who led the fight for the establishment of a library school at the State University of New York at Buffalo in 1966.

SILS is fortunate to be a part of a large university that provides many rich and varied human and physical resources as well as educational, cultural, and recreational activities. Foremost among these is a large and growing university library system with over 1.5 million volumes and subscriptions to over 12,000 current periodicals.

The State University at Buffalo libraries are a part of a developing SUNY library network of 70 campus units. They hold membership in the Five Associated University Libraries (SUNY at Buffalo, the University of Rochester, Cornell and Syracuse Universities, and SUNY at Binghamton) and in the Western New York Library Resources Council, which is made up of 50 member libraries. All of these affiliations provide for a wide access to library use and potential for increasing library cooperation.

Still other university facilities of particular importance to SILS are the Instructional Communications Center and the Computing Center. The Instructional Communications Center is the educational media center for all of the university's academic and service departments. The main University Computing Center and its library and peripheral facilities are located in the Computer Science Building on Ridge Lea Campus where a CDC CYBER 173 system is installed. Remote access computers and consoles for faculty and student use are installed throughout the campuses, including one in the SILS office area.

Construction is in progress on a 1,000-acre site in the Town of Amherst (3 miles northeast of the present campus) of a new campus that, when totally complete in the 1980s will cost from $650 million to over a billion dollars and will serve approximately 50,000 persons including students, faculty, and staff. It is said to be the largest single campus ever planned as one unit. Adjoining it will be a planned community, housing over 30,000 people.

The School of Information and Library Studies occupied most of the ground floor and parts of the mezzanine and second floor of the new Industrial Engineering Building, which was completed in the summer of 1975. When SILS moved to the Amherst Campus in the fall of 1975, it had under one roof not only spacious

administrative, faculty, and graduate assistant offices, but also classrooms, seminar and conference rooms, a faculty–student lounge, a computation laboratory, three media laboratories (including a dark room), a large library, and some general research and assembly areas. The Library Studies Library includes small group study rooms, a typing room, media viewing and listening rooms, and a work/storage room, in addition to a large open area for book and journal stacks, carrels, and lounge seating. The total space available to the School of Information and Library Studies is some 14,000 square feet.

Over 1.25 million people reside in the greater Buffalo metropolitan region and there are many area resources which benefit the school's program. Among these are the multiplicity and variety of library and information centers in the area. The American Library Directory lists over 60 public, academic, and special libraries in the Buffalo area. In addition, there are dozens of school districts that have a large number and variety of library/media centers. The largest of the local area libraries is the Buffalo and Erie County Public Library System, the 10th largest public library in the United States with almost 3 million volumes located in its huge, modern main building, 20 city branches, 34 town libraries, and four mobile units.

Other important Buffalo resources are the Albright–Knox Art Gallery, the Buffalo Museum of Science, the Studio Arena Theatre, the Philharmonic Orchestra, the Zoological Gardens, and the Buffalo and Erie County Historical Society.

SILS students play an active and important role in the operation of the school. The SILS Student Association elects representatives who attend and take part in deliberations at regularly scheduled faculty–student meetings and committees. SILS students publish a newsletter and sponsor visiting speakers, special programs, and social events.

The school sponsors a variety of activities for students, faculty, alumni, area librarians, and invited guests. There have been a number of national and statewide invitational institutes. These have been on: Interpersonal and Group Communications for the Librarian and Information Specialist in an Academic Setting, Art Libraries and Their Role in Preserving Contemporary Visual Resources, Library Service to Handicapped Children, Library Service to the Handicapped and Institutionalized, and Intellectual Freedom in Library Education.

Students are encouraged to attend professional meetings and to visit libraries and information centers in the Western New York area as well as more distant points.

Distinguished librarians and information scientists visit and lecture at the school. Expanded programs of such activities are planned for the future.

SILS graduates are eligible for membership in Beta Phi Mu, the international library science honor society, upon achieving a grade point average of at least 3.75 (A = 4). There is a Beta Delta Chapter of Beta Phi Mu that has been established at the School of Information and Library Studies.

There is a very active SILS Alumni Association in operation which publishes its own newsletter and has social and educational meetings and an annual workshop.

It supports the goals and activities of the school. Alumni membership is offered not only to the graduates of SILS but also to the graduates of the library school which existed at the University of Buffalo from 1919 to 1945.

Librarians of Western New York are encouraged by SILS to update their professional knowledge and competencies. They are welcome to register for most SILS courses as Special Students. They are also welcome at many seminars, institutes, and workshops sponsored by the school. In cooperation with the university's Continuing Education Division, SILS has also begun to offer a variety of short, noncredit courses of interest and value to librarians in the area.

Like other graduate library schools, SILS has developed a curriculum which trains graduates equally well for all types of libraries: public, academic, school, and special—and for all kinds of library work in them: acquisitions, classification and cataloging, reference and reader advisory service, and management.

Unlike many other library education programs, SILS has gone beyond these traditional areas of librarianship. We are merging information science and media with librarianship into the much larger field of information transfer. Within the school, information scientists, media specialists, and library scientists are working together in teaching and in research.

As a result, the SILS curriculum includes courses in librarianship; in information science; and in the production, use, and organization of media, including films, videotape, sound recordings, slides, microforms, and so forth. We attempt to emphasize the larger concept of information transfer in all of our courses.

Requirements for admission are a bachelor's degree from an accredited college or university with an undergraduate major usually in one of the arts or sciences, a minimum grade point average (GPA) of 3.0 (with 4 $=$ A), and a score of 1,000 on the Aptitude Section of the Graduate Record Examination (GRE). Other factors considered are letters of reference from previous teachers, work supervisors, or librarians; the statement from the applicant as to why he or she wishes to enter librarianship; and impressions gained from personal interviews.

Decisions on admissions are made by the Admissions Committee, consisting of the assistant dean, two SILS faculty, and one student member. Their main consideration is the potential of the applicant to complete the M.L.S. program of study and then to make a successful contribution to the profession. Standards for admission, though high, are flexible for the candidate who may show great potential even though his or her GPA and/or GRE are below the norm required. Through a provisional admission for one semester, such applicants are given an opportunity to prove themselves. Students may start their program of study in either the summer or fall term.

The SILS curriculum is characterized by flexibility in meeting the needs of the student and in preparing graduates for future challenges of librarianship. Only three core courses (nine credit hours) are required out of the 36 credit hours necessary for graduation. The rest of the courses are selected by the student with the advice and approval of his faculty advisor and depend on the student's interests and area of specialization.

The present enrollment of the school has leveled off to just under 200 students, but since about 40% of these tend to be part-time, the full-time equivalent enrollment is at the 135–140 level. There are currently 10 full-time and three part-time or adjunct faculty members. With the move to the new campus it is expected that both the number of students and faculty will increase substantially, as well as the areas of specialization and programs of study. Already underway is a proposal for a sixth-year and/or doctoral program.

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GEORGE S. BOBINSKI

NEW YORK. STATE UNIVERSITY OF NEW YORK AT STONY BROOK LIBRARIES

The institution which is now the State University of New York at Stony Brook was established in 1957 as the State University College on Long Island at Oyster Bay, at Planting Fields, the arboretum-estate of William R. Coe. Its original mandate was limited to training teachers of mathematics and science for secondary schools and community colleges. Only 2½ years after its founding it was designated a university center within the State University of New York system and its name was changed to the Long Island Center of the State University of New York, reflecting an extension of its mission to include a full range of undergraduate and graduate programs through the doctorate in the humanities, social sciences, sciences, and engineering. According to the 1960 Master Plan for the State University, educational programs for the professions and other specialized areas other than engineering were to be added later.

In 1962 the Long Island Center was moved to its present location and was renamed the State University of New York at Stony Brook. This relocation was anticipated at the time the College on Long Island was founded in 1957.

In the early years rapid changes in the university's mandate were accompanied by substantial changes in educational philosophy. Initially the academic program adopted an interdisciplinary approach modeled after the Hutchins program at the University of Chicago. Specialization identified with the development of graduate programs and the decline in the Liberal Arts Curriculum generally forced the abandonment of the earlier philosophy. Almost coincidental with the move to Stony Brook, the common curriculum for undergraduates was replaced by disparate courses selected by the student to satisfy his own and the university's requirements. This pattern continues as the dominant one although the university has experimented with new kinds of undergraduate and graduate programs. A major objective of these experimental programs is to relate the student courses into meaningful units, for example, the programs in urban policy and engineering sciences and in environmental education.

Within a relatively short period of time the State University at Stony Brook has developed its essential characteristics as a comprehensive, multipurpose institution of higher learning. It emerged on the higher education scene when a number of institutions were starting *de novo*, yet it has grown faster and with a more diversified program than many of its counterparts throughout the country.

Development of the Library System

This rapid development from small liberal arts college to full-fledged university, the changes in mandate and educational philosophy, and physical shifts and relocations were major factors in determining the pattern of growth not only of the university, but also of the library and its collections and services. While the library was in Oyster Bay, attention centered on collecting basic materials, establishing policies and procedures, planning a new building for the Stony Brook campus, and recruiting and training a staff. The institutional mandate to train teachers of science and mathematics was supported by an aggressive acquisitions program in the sciences. During the Oyster Bay period the question of departmental libraries for the sciences was raised and resolved almost by fiat. Since space assigned to library purposes in the main building on the Oyster Bay campus was inadequate for the total collection, selected science materials were housed near the science departments. A departmental library had been established. When the program for the chemistry building for the Stony Brook campus was written, a departmental library was included in the plans. Subsequently, as programs for science buildings—except for the first biology building—were written, they too included specifications for departmental libraries. As a result, the main library system now has departmental libraries for chemistry, mathematics–physics, engineering, earth and space sciences, and biology.

By the mid-1960s annual budgets for library materials were increased to almost $1 million to support new and developing programs, particularly at the graduate

level. The acquisitions program broadened in scope to include in-depth purchase in a wide variety of fields. In many instances the acquisitions centered on or were enhanced by lot purchases or gifts of varying importance. The mathematics collection; the Theodore Chanler Collection in music, supplemented on a regular basis by gifts by Ralph Satz and others; the Prestini Collection, particularly strong in art and architecture; the House Collection in Sociology; the Hartnagel Collection in Geology; and the French Romantique Collection formed the nuclei around which the Stony Brook library developed. Particularly significant, however, were the purchases of Latin American and Ibero-American collections reflecting the emphasis on Ibero-American studies that developed during the 1960s. Among these, the Pablo Neruda, Jorge Carrera Andrade, the Brazilian, Amunategui, and the Columbina Collections are the most significant. Other collections which, though general in scope, added considerably to the library's volume count and gave breadth to the general collections include the gift of the Nicholas Kelley Collection of some 10,000 volumes. Standard editions of English and American authors and selections of secondary materials and contemporary trade books formed the bulk of the collection. Purchase of a number of collections with broad subject coverage enhanced the quality of the library. The best example of this type of purchase was the Lindmark Collection, which totaled approximately 60,000 volumes and represented the collecting activities of a New York book dealer.

Acquisition of these collections created enormous organizational and warehousing problems for the librarians. Cataloging and processing backlogs that included at one time some 80,000 books and vast quantities of microforms and documents challenged the staff's ingenuity and organizational skills.

The emphasis on collection development seemed to be an overriding concern of the university and library administrations during the 1960s. During this period the library acquired the bulk of its microform collection, which now surpasses the book collection in title count and includes some 44,000 reels and 1,156,000 flat pieces. A collection development staff appointed during the late 1960s was assigned responsibility for coordinating the selection and acquisition of material for specified subjects. A special collections program started in 1969 focused attention on acquiring and organizing collections whose subject, format, or content required special treatment. In addition to those mentioned earlier, some of the special collections the Stony Brook library has acquired include the Hardwick English and Irish political pamphlets covering the period 1789 to 1829; the Alfred O. Dickman Collection on 20th-century printing and publishing; the Oakley C. Johnson Papers; works and manuscripts of poets who taught at Black Mountain College; Perishable Press publications including correspondence with contemporary poets; children's books of the 19th and early 20th centuries; Robert Crealey Letters; and the Conrad Aiken and Robert Payne collections. The Stony Brook library became a depository for U.S. government documents in 1963. The gift of extensive files of older U.S. government publications by the Cooper Union Library, which had been a depository since 1930, strengthened the library's document holdings. Stony Brook sub-

sequently became a depository for New York State documents and has collected official publications of the United Nations, Great Britain, Latin American countries, Canada, France, and local governments on a selective basis.

The problems of collection development were aggravated throughout the early period by the need to shift, move, and adjust the collections frequently. Initially the space available for library purposes at the Oyster Bay campus was limited. Collections outgrew shelf space at a rapid pace. With the move to Stony Brook in 1962, a major part of the library collection, which had been housed in the Trophy Room, Great Hall and other rooms of the Coe Mansion and in the science building, were temporarily relocated to two of the classroom buildings on the new campus while construction of a library building was underway. Part of the collection was left in Oyster Bay for biology students whose academic programs were continued there. In the summer of 1963 the bulk of the book collection had to be moved to the new 100,000-square-foot Frank Melville Library even though it was not completely ready for occupancy.

The presence of university administration in the Melville Library during the 1960s created not only space problems but also tensions which were endemic to that period. The library, because of its role as landlord, was caught in the crossfire of student sit-ins directed against the university administration. The frequency with which library windows had to be replaced was a measure of the student sentiment of the period. The Melville Library was to achieve some fame when the picture of the university president addressing a group of student demonstrators in the library was featured on the cover of the *Library Journal.*

As the collection grew during the 1960s, portions of it had to be put into storage as it outgrew available space. In 1967, as it became increasingly apparent that the building completed in 1963 was inadequate as a university library, a program was written for a significant expansion of that building. The basic program for the building was for a Library–Humanities building, with approximately 300,000 square feet of space to be added to the old building by completely encircling it with new construction. Some 60,000 gross square feet of the new construction was to be assigned to faculty offices and classrooms; the remainder to various library operations and institutes. The design of the building introduced many problems. Since the old building was to be continued in operation while construction was in progress, working conditions for the staff were often substandard. The discomfort for library patrons and staff was only partially relieved by a sense of pioneering and the hope that the new building would indeed be adequate for full-fledged library services. Poor working environment contributed to a high staff turnover that occurred during the late 1960s and early 1970s, among the professional staff especially.

The design of the new construction necessitated major shifts and moves. The construction contract required that as the construction on the new exterior was completed, all library operations would move into this new construction while the old core building was rehabilitated. As the core was completed, those operations that were to be housed there had to be moved again.

Nevertheless, occupancy of the new building in 1972 can be viewed as the time

that the Stony Brook library system reached a level of maturity that allowed it to function as a university library system. The cataloged collection approached 900,000 volumes; periodical subscriptions totaled over 6,000. Since the move to the new building, existing services have been augmented and new services are being developed. Automation of certain operations, notably circulation, has been accomplished. Other systems such as the Ohio College Library Center cataloging system have been implemented. A music library and a map library have been added as new services. Machine-readable data bases available through Systems Development Corporation and the Biomedical Communications Network, which include ERIC and *Psychological Abstracts*, are now accessible to library patrons. Special study facilities are available to graduate students.

The library has begun to define its role as the major research library on Long Island, as one of the four University Center Libraries in the SUNY system, and as a developing research library in the community of libraries. The program for exchanging library materials with the Peoples' Republic of China and active membership in the Long Island Library Resources Council, the SUNY system, the Center for Research Libraries, and the Association of Research Libraries attest to efforts in these directions.

In the 18 years since the university was founded, the library has grown from a germ of an idea to a budding university facility. The staff now totals approximately 160, who serve the main library and the five departmental science libraries.

Affiliated Services

Two agencies affiliated with the university—either directly or indirectly, and housed in the Melville Library—have developed research collections and services of interest to scholars.

THE INSTITUTE FOR COLONIAL STUDIES

The Institute for Colonial Studies was organized in 1967 to promote study of political, social, and cultural activities of the American Colonies and early Republic. To facilitate this work, the institute has microfilmed the public records of a number of political subdivisions. Microfilming the records of townships of Suffolk County, where the university is located, was an early objective. A number of other political units, including New York City and New York State, Pennsylvania, New Hampshire, Massachusetts, Virginia, and their subdivisions, are now represented in the collection. Tax lists, mortgage records, court actions, are examples of the materials found in the collection. An unusual feature of the collection is the extensive coverage of Early American Probate Court Records from New Hampshire, Massachusetts, Pennsylvania, and Virginia.

Although the institute was disbanded in 1975, its microfilm collections are maintained by the Melville Library.

THE CENTER FOR CONTEMPORARY ARTS AND LETTERS

The Center for Contemporary Arts and Letters has as one of its prime functions obtaining special archival collections for use by graduate departments. Toward this end, the center is developing the full use of the computer accessioning system entitled GRIPHOS (General Retrieval and Information Processor for Humanities Oriented Studies), which is now the standard for 22 major museums within the Museum Computer Network and for the United Nations Dag Hammarskjöld Library. The Museum Computer Network shares space, staff, and facilities with the center while preserving its autonomy as a private nonprofit corporation. The present holdings of the center available through GRIPHOS include important collections of 20th-century opera; special materials dealing with Bartók, Stravinsky, and Schoenberg; and the William Butler Yeats Archives, consisting of 80,000 frames of microfilm, which are scheduled for computerization by 1978. The Center for Contemporary Arts and Letters was created in 1967 to evaluate new trends, to undertake research in arts and literature, and to facilitate the transfer of new knowledge to instructors, performers, and critics.

Health Sciences Center Library

In June of 1963, the Committee on Medical Education, established by Governor Nelson Rockefeller and headed by Malcolm Muir, presented what was to become known as the "Muir Report" to the Board of Regents of the State of New York. The findings of the committee culminated in a decision to place a new Health Sciences Center at the State University of New York at Stony Brook, of which the Health Sciences library is a part.

Detailed planning for the center began in September of 1966 and actual planning for the library, using consulting services, in 1968. Early in 1969, a full-time director was hired with the mandate to establish a library facility for use by the faculty and students of the Schools of Allied Health, Basic Sciences, Dental Medicine, Medicine, Nursing, and Social Welfare; and to provide a resource for persons engaged in health care delivery in Nassau and Suffolk Counties. Recruitment of staff and acquisition of equipment and materials were begun immediately.

From 1968 until 1973, the staff and collections were housed in temporary quarters in East Setauket, 3 miles from the campus. After only 2 years, a collection approximating 55,000 volumes was made available to the faculty and students of the center and the university community, and to others engaged in health care delivery. On-line access was also available to the State University of New York Biomedical Network data bases in Albany for bibliographic searching.

In 1973 the library was relocated to a facility on the South Campus pending a final move scheduled for August 1976, to the Health Sciences Center where it will occupy 50,000 square feet. This additional space will make it possible to integrate audiovisual software into the library holdings, which now approximate 115,000 volumes. During the summer of 1973, arrangements were made to further augment

the library's reference capabilities by providing on-line bibliographic searching of the MEDLINE, CATLINE, and SERLINE data bases, available through the National Library of Medicine. A Department of Pharmacological Sciences was added to the School of Basic Health Sciences in the 1973/74 academic year, and the library's negotiations for access to the TOXLINE data base were completed. More recently, the CANCERLINE, CANCER PROJECT, EPILEPSY, and CHEMLINE bases have been added, bringing the number of citations available for on-line bibliographic searching to more than 3,700,000.

Periodical and serial holdings are currently being entered into PHILSOM, a serials control system.

The library is staffed by eight librarians, including the director, and 14 supportive persons.

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DONALD C. COOK

THE NEW YORK TIMES

The New York Times—the newspaper—has long been a resource of the general reference and serials divisions of libraries, and The New York Times Company is a supplier of diverse services and products to the library community. These range from traditional reference books to The Information Bank, an on-line, interactive information storage and retrieval system employing the latest computer technology.

The Newspaper

The Times was regarded, almost from its beginning in September 1851, as an authoritative source of the news. It had publishers and editors who were keenly aware of a newspaper's obligation to provide unbiased and accurate information on current affairs. It has consistently maintained a large staff of reporters, many of whom were at the top of their profession during their tenure at *The Times*, and many of whom specialized in certain fields, bringing special expertise and background knowledge to bear on their work (some of them were recognized authorities in their fields when they came to work for the paper, others became so in the course of their work as reporters). But perhaps the most important single factor was that *The Times* published a large number of source documents in full or in substantial excerpts, and thus came to be regarded as "the newspaper of record."

The Index

Also, from its very beginning, *The Times* prepared an index to its back issues. For the first 7 years, this index was kept in longhand in a large, leather-bound ledger volume; starting in 1858, it was set in type and displayed on long galleys, mounted on cardboard, that were presumably hung on the newsroom walls. Once the index was set in type, it was only a small step to publishing it in book form. The earliest extant volume of *The New York Times Index* is dated 1862; it contains about 60 pages, is about as big as a small paperback book, and sold for a quarter. The *Index* has been published continuously ever since then, except for the years 1905 to 1912; first annually, then semiannually, then quarterly, then monthly with an annual cumulative volume; and—since 1948—semimonthly with an annual cumulation. Special indexes have been prepared for the missing years 1905 to 1912, and the entire series has been made available in reprint, including the handwritten volume covering the first 7 years.

Initially, *The Times Index* was prepared for use by the staff, and it was only incidentally offered to outsiders. But because *The Times* was a "newspaper of record" and was used as such by libraries and their patrons, the existence of an index was most significant. Libraries became as dependent on *The Times Index* as they were on *The Times;* and while the *Index* was usually a losing proposition financially and only occasionally broke even, its existence contributed materially to the newspaper's reputation and to its circulation, particularly in educational institutions.

The *Index* was the first of a long line of library and information products supplied by *The Times* and may be said to have launched the company's diverse and generally successful operations in this field.

It may be worth pointing out that over the years the *Index* originated several new features and techniques in the field of indexing, some of which have remained unique to this day. From the beginning, it shunned the system of main headings

and modifications employed by the *Index* to *The Times of London* (as well as by many conventional back-of-the-book indexes), but used instead brief summaries—usually one sentence or only a phrase—positioned in one-entry-a-line fashion under main headings and subheadings of the keyword type. During the 1930s, as the stories in the newspaper became longer and more complex, the summaries became longer and more detailed and gradually evolved into informative abstracts. As a result, it became possible to use the *Index* as an independent reference work, and the users frequently obtained all the desired information from the *Index* directly, without having to go to the newspaper files for the referenced articles. With the advent of modern communications, major national, international, and general news was published everywhere almost simultaneously, and so the *Index* became useful not only as an independent reference work and as a detailed index to *The Times,* but also as a guide to the contents of other newspapers and magazines.

As the abstracts became longer and more detailed, it became increasingly expensive to duplicate them under all the headings and subheadings where they should be entered. To minimize expense without sacrificing depth of indexing, a system of cross-references was evolved that led the user not just from one heading to a related heading but from one heading to specific abstracts under another heading, using the dates of these abstracts as specific points of reference. Thus it became possible to enter a detailed abstract of, say, 10 or more lines under just one heading, and cover relevant subsidiary topics, including names of persons and organizations, by single-line cross-references to that abstract. These cross-references were then cumulated, first alphabetically by the headings to which they led, and then chronologically by abstract dates. In essence, this was an application, in a printed work, of the principle of concept coordination—to my knowledge unique in *The Times Index.* While occasionally considered forbidding and cumbersome, especially by novice users, this technique is absolutely essential in order to keep the *Index* to a reasonable size and generally proves more efficient for the experienced user than straightforward duplication of abstracts would be.

One further important innovation should be mentioned. Starting in 1965, the annual volumes have included maps, charts, photographs, and other illustrations, usually taken from *The Times;* these have substantially enhanced the usefulness of the *Index* as an independent reference work.

Back Issues and Microfilm

At first, the *Index* was used as a guide to back issues of the newspaper in their "natural state"—one may imagine piles of back issues stacked in more-or-less orderly fashion on tables or shelves. During the 19th century, *The Times* began producing buckram-bound volumes of back issues, using fine ragpaper editions, and marketing these to libraries along with the *Index.* During the 1930s, as the newspaper grew larger and larger, these volumes grew heavier and heavier and

more and more expensive, and the bound-volume operation came to be regarded as a white elephant. Technology came to the rescue with the invention of microfilm, and shortly after World War II, *The New York Times on Microfilm* was being sold intensively to libraries and quickly made the bound volumes obsolete.

Originally, the microfilm edition was produced and marketed for *The Times* by outside companies. In the late 1960s, *The Times* acquired a small microform publishing company and started producing and marketing the microfilm edition itself. This company—Microfilming Corporation of America, now located in a large new plant in Glen Rock, New Jersey—is now a major factor in the microform industry; it publishes, in addition to *The Times*, microform editions of scores of other newspapers and magazines, microforms of document collections and of the transcripts of oral history collections, and industrial microforms.

The New York Times on Microfilm is available complete to the first issue of *The Times*, September 18, 1851. It is also being marketed in special period collections, primarily for schools and colleges, for which printed chronological and subject guides and other bibliographic tools are also available.

Books

The next major expansion of *Times* operations in the library field came at about the same time, with the acquisition of Arno Press, Inc., a reprint publishing house. Arno's principal business had been the reprinting (usually in facsimile) of out-of-print books, with the books often grouped into scholarly topical collections. Following its acquisition by *The Times*, this business was expanded significantly; it now covers the reprinting of magazines, pamphlets, and collections of articles from *The Times*, as well as books. There is no point in listing Arno's current offerings— the latest catalog covers several thousand titles—but a brief description of the works derived directly from *The Times* may be of value.

Arno Press, in collaboration with *The Times*, has produced three major collections of critical reviews from *The Times:* the Book Reviews, Film Reviews, and Theater Reviews. The first comprises a reprint of *The New York Times Book Review*, the Sunday (originally Saturday) supplement, going back to the first issue of 1896—a set of 135 volumes. This set is accompanied by a massive cumulative index, produced in a 5-year effort involving specialized editorial talent as well as the latest computer technology. The index is divided into five volumes, containing, respectively, the author index (covering editors, translators, and illustrators as well as authors), the title index (covering subtitles, permuted titles, and titles of collections), the byline index (which includes reviewers, essayists, columnists, and even letter-writers), the subject index, and, finally, an index by literary genres. The reprint is an on-going series, with two new volumes issued each year, the latter containing an index (divided into the same five segments) for that year's Book Reviews. It is anticipated that these annual indexes will be cumulated and issued as separate works every decade.

The other two collections are quite similar. One comprises all movie reviews

published in *The Times* since the first one identifiable as such, in 1913; the other comprises all the theatrical reviews from 1920 to 1970. A supplement for each of these two collections is published every other year; and a new Theater Reviews collection, for the years 1870 to 1920, was published in 1975. These series are also accompanied by detailed indexes covering the titles of movies and plays, the producing companies, and every person mentioned in the credits—from producer, director, author, and star down to scenic designer, make-up artist, and bit actor.

Other *Arno–New York Times* offerings for libraries include the Decade Books, a collection of major events of each decade as reported in *The Times; The New York Times Biographical Edition,* a looseleaf service providing the principal biographical articles from *The Times* in alphabetical order each month; and *The Great Contemporary Issues,* a series of books reprinting articles from *The Times* on topics of public concern. This series includes such volumes as *China, Drugs, The Mass Media and Politics, Crime and Justice, Education in America, Values Americans Live By,* and many others; and each book includes an index, a reading list, and other bibliographic apparatus.

While Arno Press is *The Times*'s book-publishing affiliate most concerned with the library world, some offerings to librarians are also made by two other *Times* affiliates, Cambridge Book Company (primarily a publisher of textbooks) and Quadrangle/The New York Times Book Company, which, though chiefly a trade-book publisher, has also published almanacs, atlases, and other reference works.

Information Services

Despite the availability of government-operated information centers, public libraries, radio and television news and public information programs, and a variety of print media, the public has traditionally used the local newspaper offices as an information facility. Thousands of inquiries pour into *The Times* building annually by mail, by telephone, and in personal visits. A public telephone information service, operated by *The Times* free of charge in conjunction with its clipping library (or "Morgue"), was discontinued in 1971 because it was no longer able to cope effectively with the volume of calls; nevertheless, calls continue to flow into the news, public relations, and other departments. The calls range from requests for help or for single articles or citations to sizable research projects. Most inquiries, whether received by mail or by phone, are now referred to the *Index* and microfilm facility.

The Times's clipping, photo, and reference libraries, while generally restricted to use by *The Times* staff, do cooperate with other libraries in the New York Metropolitan Area.

The Information Bank

The latest addition to the company's library and information services, and surely its chef-d'oeuvre in the field, is The Information Bank. Derived from *The*

Times Index, The Information Bank is a fully computerized, on-line, interactive information storage and retrieval system. The data base consists of abstracts of virtually all material published in *The Times* and selected articles from some 60 other newspapers and magazines, and is accessed via remote cathode-ray tube terminals connected to its own computer by leased telephone lines or the public telephone network. A simple but effective procedure permits the user to conduct his searches without requiring technical background, lengthy instructions, or operator intervention. It includes on-line interaction with the thesaurus of search terms, combining search terms with Boolean "and," "or," and "not" logic; and making inquiries as specific as desired by choosing any of a variety of bibliographic modifiers, such as dates, source publications, types of material, types of accompanying illustrations, and the like.

Development of The Information Bank began in 1966. The project was designed in part to absorb and replace existing services and in part as a new, revenue-producing enterprise. It became fully operational in late 1972. Access is by subscription, and at present the list of subscribers includes government agencies, news media, public and university libraries, industrial and financial companies, and foundations. *The Times Index* is now produced as a part of the input operation of The Information Bank.

The data base now contains nearly 1¼ million records and grows by some 200,000 records a year. All of it is stored on-line, and there is no intention to purge it for the foreseeable future.

Even though The Information Bank is in full, commercial operation, it is not by any means considered a completed project. The thesaurus is open-ended and continuously growing; the software and tutorial messages are constantly being refined and revised, often in response to users' demands and suggestions; and new terminal and hardware facilities are being accommodated as necessary. Further changes are anticipated to handle the growth of the data base and the subscriber universe, and in response to the dynamics of computer and communications technology.

JOHN ROTHMAN

NEW YORK UNIVERSITY LIBRARIES

New York University (NYU) is one of the world's largest private universities, comprising five major centers in Manhattan, with its largest concentration at Washington Square. In addition to undergraduate and graduate colleges of arts and science, it has graduate schools of business; dentistry; education, health, nursing, and art professions; law; medicine; and social work, and a school for continuing education. The university's current enrollment exceeds 30,000 students,

and the faculty numbers over 5,000. The curriculum has been openly innovative, pioneering in many fields, most recently in graduate cinema. A pragmatic adaptation needs, whether in curriculum, hours, or location, has made the school vital to the city's life and ensured its growth. In a highly competitive location, it has consistently attracted strong enrollments by high standards for admission and performance.

The university was founded in 1831 as an entirely secular institution, contrasted to schools then largely under religious auspices, an idea clearly consonant with the attitudes of its founding father Albert Gallatin, who had formerly been Jefferson's secretary of the U.S. Treasury. It aimed to meet the educational needs of the rising middle class. A slow start in rented quarters changed rapidly as Washington Square became the social center of New York. Plaques on the university's main building record some of its early associations. Henry James, who in his fiction memorialized the social milieu of Washington Square, was born on this building's site and in the shadow of its predecessor, the university's gothic building where Lyman Draper, pioneer in photography, and Samuel F. B. Morse, inventor and artist, taught.

The seven principal libraries of the university contain 2,300,000 volumes. Largest among them is the general Bobst Library (1,700,000 volumes). Other libraries are subject-oriented: Fine Arts, Dental, Medical, Law, Mathematics, and Business. Oldest among these is the Law Library (1863), but the Bobst Library contains some volumes that came from the university's first library.

The greatest event in the early years was a landmark—the national Library Conference of 1853, held at New York University. It was the forerunner and in some ways the source of the Philadelphia conference that in 1876 founded the American Library Association. Just a few years before, the NYU Library had been mortgaged to erect the building in which the conference was held and in which the library still occupied but a few rooms. Until the 20th century, libraries developed at New York University by depending upon gifts rather than purchases and complacent in the knowledge that New York was a major center of the book world.

Impetus to growth came at the turn of the century with the gift by the family of Jay Gould, 19th-century American financier, of the Gould Library, a magnificent marble creation of Stanford White, ringed by the Hall of Fame for Great Americans, that became the focal point of the new University College. So elegant were the facilities offered that the university's administration migrated northward to University College in the Bronx, bearing with them the liberal arts library from the Square. In the 1930s the administration returned, and in 1973 the library followed, after the sale of the Bronx campus.

Meanwhile, in 1919, an undergraduate college had been founded by the university in Manhattan, and its library evolved successively as the Washington Square College Library, the Washington Square Library, and the General University Library, each change reflecting an expansion that made it eventually the largest library in the system. With the changes, a system arose unifying the independent libraries, administered from 1936 by Directors of the Libraries—Paul North Rice, R. B. Downs, Ernest L. Hettich, and Charles F. Gosnell—and later by Deans of the

Libraries, George Winchester Stone, Eugene P. Kennedy, and currently, Dr. Carlton C. Rochell.

In 1973, the Bobst Library, a 12-story building at 70 Washington Square South, costing in excess of $25 million, was erected. It was named after the principal donor, Elmer Holmes Bobst, pharmaceuticals manufacturer and industrialist, who asserted that his $11-million gift was his way "of paying back libraries for all they have given me." At its dedication, one of the speakers was the daughter of the President of the United States. Two hundred feet square, covering a full city block, the building, designed by Philip Johnson and Richard Foster, is one of the largest open-stack libraries in America and the largest university library building in New York City.

The Bobst Library is planned for maximum utilization of technological benefits, including automated circulation and cataloging systems. The expansion of all holdings has accelerated, and new areas such as microforms are emphasized. An instructional materials center is significant.

From the founding of the United Nations, New York University has had delegate depository status, giving it an almost unrivaled collection of UN documents. Bobst is also a federal depository. Three rare book collections are outstanding: Fales, Frost, and Tamiment. The Fales Library, assembled by New York bibliophile, banker, and yachtsman DeCoursey Fales, contains 75,000 books and 53,000 manuscript items in English and American literature. The Robert Frost Library is the poet's personal collection from his Cambridge home. The Tamiment Library of books and manuscripts focuses upon labor history and probably is one of the finest resources for original documents relating to the labor movement.

Within recent years the library staff has doubled in size. Professional librarians are expected to have an undergraduate degree, a library school degree, and a further graduate degree in a subject. In 1974 the librarians gained full faculty standing and University Senate representation.

CARLTON C. ROCHELL

NEW ZEALAND, LIBRARIES IN

New Zealand consists mainly of two major islands (named rather unimaginatively the North Island and the South Island), is 103,000 square miles in area, and has a population of approximately 3,000,000. Its small population—thinly spread over large rural areas with pockets of concentration in a few of the larger cities—and its almost completely overseas-dependent economy have necessarily determined many of the features of library collections and library services. The strength and popularity of the Country Library Service and the patchiness of academic library collections, for example, testify, respectively, to the importance attached to library service to scattered communities and to inadequate book budgets trying to cater to

increasing depth of research demand. Then again, one of the consequences of the latter condition, stamped indelibly on professional thinking in New Zealand, is the question of cooperation, and the sharing and pooling of resources.

European settlement in New Zealand began in a haphazard way in the latter years of the 18th century and British sovereignty is accepted as having been established by the Treaty of Waitangi signed by 45 of the Chiefs of the Northern Maori tribes on February 6, 1840. New Zealand then entered upon a period of administration as a Crown colony, first as an extension of the Colony of New South Wales. Representative government was firmly established by the New Zealand Constitution Act of 1852 which called into being a number of provincial councils as well as a central government concerned with matters pertaining to the country as a whole. The provinces were abolished in 1876, and the pattern then set of representative, responsible central government combined with representative local government has continued.

Apart from the small but growing number of libraries supported by industries, firms, and other private institutions—such as the private schools, the theological colleges, and the professional associations—libraries in New Zealand are funded by government, either central or local. All public libraries are financed by local authorities and, with the above exception, all others derive their support from central government funds: the government department libraries from their respective departments; and the National Library, school libraries, and the libraries of the universities and other institutions of tertiary education from funds voted to the Department of Education.

Public Libraries

Appreciation of books and libraries was one of the characteristics of many of the early settlers of New Zealand. In December 1840 the first institution that could be described as a public library was established in Wellington, though the fees both for entrance and subscription were high. Partly for this reason, that particular institution was wound up and its bookstock handed over to the fledgling Port Nicholson (i.e., Wellington) Mechanics' Institute Public School and Library, which began operation in 1841. A similar institution was opened in Auckland in 1842 and others followed in Dunedin and Christchurch in 1859. Other centers followed suit, their athenaeums and mechanics' institutes offering reading facilities and general educational and cultural opportunities to their members.

In 1869 the Public Libraries Act was passed, giving local authorities the power to levy a special rate (i.e., a tax) for the purpose of establishing libraries, such rates not to exceed 1 penny in the pound. The act required that admission to such libraries be free but it was accepted that service for lending constituted a charge upon the user. This practice was confirmed by the Public Libraries Subsidies Act of 1877 which required that any local authority qualifying for the subsidy must charge a minimum subscription of 5 shillings per annum. In 1874 the total number

of institutions cited in the census as "public libraries, mechanics' institutes and other library and scientific institutions" was 161, having a total of 9,411 members and a bookstock of 98,039. The population at the time was 344,984. The data in Table 1, taken up to 1926 (shortly before the subsidy petered out) shows a steady but certainly not spectacular growth, but there is little doubt that, without the subsidy, growth would have been even less noticeable.

TABLE 1

Date	Population	No. of institutions	No. of members	No. of volumes
1874	344,984	161	9,411	98,039
1878	458,007	187	12,092	173,021
1881	534,030	225	12,868	198,520
1886	620,451	303	13,684	292,108
1891	668,632	298	14,489	330,770
1896	743,207	304	17,638	409,604
1906	936,304	313	22,770	567,841 [a]
1911	1,058,308	358	31,221	863,878
1916	1,149,225	404	33,024	967,465 [b]
1921	1,271,664	421	60,441	1,132,079 [b]
1926	1,408,139	435	63,403	1,266,892 [b]

[a] Suspected to be incomplete.
[b] Public libraries only.

The move toward free public library service up to the 1930s could be said to have been about as slow as the growth in the number of libraries and subscribers in the same period. However, the decades of change were about to begin. In 1934 the Libraries Association of New Zealand (the forerunner of the present New Zealand Library Association) requested the Carnegie Corporation of New York to underwrite a survey of libraries in New Zealand. The corporation agreed and the surveyor appointed was Ralph Munn of the Carnegie Library of Pittsburgh, who had just completed a similar survey in Australia. In association with John Barr of the Auckland Public Library, Munn prepared a detailed and wide-ranging report which was published by the Libraries Association.

Much of the change that has taken place since then stems from the recommendations in that report. In respect of public libraries the Munn–Barr report was one of the mainsprings of the campaign for free service which got underway in the 1940s. At the time of the report only two libraries of any consequence were essentially and fully free public libraries: those in Dunedin and Timaru. Of the other main centers, Auckland "went free" in 1946, Wellington in 1951, and Christchurch in 1952. It was not until 1973, however, that there fell, as it were, the last bastion of the subscription system, the city of Nelson near the northern tip of the South Island.

The New Zealand free public library, however, is not as free as that envisaged in

the Munn–Barr report. Partly because it was believed that it was the only way of overcoming popular prejudice against the free library, the establishment of free service went hand in hand (and continues to do so) with the establishment of rental collections. The proceeds from rental collections (which are confined largely to light fiction but also in some cases to popular nonfiction) serve either to sustain the rental collection itself or to add to the free collection.

Long before the battle for free service was won, however, it was evident that the system that made the boundaries of public library service coterminous with the boundaries of local authorities was incapable of providing anything like a nation-wide service. The establishment of the Country Library Service (CLS) in 1938 struck the first blow in the struggle to provide such a service, and the CLS is still the most successful contender in the field. Proposals for regional service, having a blend of central and local government effort, have long been preached, and one pilot scheme which nearly got underway in 1960 foundered because of the failure of support, not from central government but from local government. Legislative proposals for reform in local government which are presently under study have again raised the issue of regional systems and look like having rather more fruitful possibilities, but it remains to be seen what will eventuate.

[Note: The contribution of the CLS to public library service in New Zealand is monumental. Any discussion relating to public libraries is therefore deficient if it does not include reference to the CLS. For the purpose of this article, however, description of the CLS is to be found under the heading "National Library."]

University Libraries

It is possibly in the area of university libraries that the drawbacks of New Zealand's geography show themselves most clearly. Condemned to supporting six universities out of a total national income for a country of 3 million people, it is inevitable that financial resources are insufficient to create collections of real excellence. It is not surprising, therefore, that the loudest calls for rationalization and cooperation seem to come from the universities, for it is they who of all are most conscious of the problem of resources. A. D. Osborn, in his 1960 survey, included Table 2 showing that, in terms of bookstock "the universities do not take their rightful place in the library system; instead they rank only sixth, seventh, eighth and ninth in the country" (*1*).

The last published census of libraries (1969) shows a picture somewhat different but still not what Osborn saw as necessary, with these same universities ranking third, fifth, seventh, and eighth (see Table 3).

More recent figures (1972) (*2*) for these four institutions show considerable increases in a very short period, certainly much greater increases than would have been shown in any of the other institutions listed, so it is clear that the universities are pacing ahead in relation to the others (see Table 4).

TABLE 2[a]

Library	Volumes
1. National Library Service (including the School Library Service)	1,847,190
2. Auckland Public Library	330,000
3. General Assembly Library	255,675
4. Wellington Public Library	230,391
5. Dunedin Public Library	171,174
6. University of Otago	158,613
7. University of Canterbury	120,000
8. University of Auckland	119,124
9. Victoria University of Wellington	102,888
10. D.S.I.R.[b]	101,000
11. Alexander Turnbull Library	100,000
12. Canterbury Public Library	100,000

[a] From Osborn, Ref. 1.
[b] Department of Scientific & Industrial Research.

TABLE 3

Library	Volumes
1. National Library (including School Library Service)	3,192,766
2. Auckland Public Library	487,892
3. University of Otago	351,773
4. General Assembly Library	340,767
5. University of Auckland	318,329
6. Wellington Public Library	309,186
7. University of Canterbury	261,800
8. Victoria University of Wellington	250,591
9. Dunedin Public Library	240,584
10. D.S.I.R.	239,403
11. Canterbury Public Library	218,488
12. Alexander Turnbull Library	139,815

TABLE 4

Library	Volumes
1. University of Auckland	423,000
University of Otago	423,000
2. University of Canterbury	329,000
3. Victoria University of Wellington	305,000

In the same period, the General Assembly Library, for instance, had added some 20,000 volumes and the Dunedin Public Library some 7,000 or so. (N.B.: The other two universities, Massey University at Palmerston North and University of Waikato in Hamilton, were established subsequent to 1960.)

From poverty-stricken beginnings, therefore, the university libraries have, of recent years, been regarded by their nonacademic colleagues as something in the nature of rich relations. Founded mostly in the latter part of the last century, the libraries of the universities were starved of anything approaching real support, so that by 1934 the Munn–Barr report declared that they appeared to be "mere annexes" to the institutions they served. The report goes on:

> The book collections are much too small to support effective undergraduate instruction and they offer little or nothing to advanced students and faculty members. Bibliographical aids are few and even the cataloguing of the collections betrays generally the lack of training in present or former staff members. . . . The system of dividing the book fund more or less equally among professors without reference to their book needs is indefensible. The insistence of professors in maintaining separate departmental libraries results in a scattering of small collections, which are usually entirely without supervision and are even locked away from student use much of the time. With professors purchasing most of the books the librarian has had little authority and the position has become little more than a clerkship . . . (3).

The process of change began in 1931, when the Carnegie Corporation offered each of the four institutions a grant of $5,000 per year for 3 years provided certain standards relating to equipment, staffing, and the expenditure of the grants were met. It is an indication of the snail's pace at which development took place that it was as late as 1946 that the last of the four qualified for the grants. As well as the grants, the corporation established fellowships for the purpose of sending the librarians overseas for training at accredited library schools and to study the practice of university librarianship at leading overseas universities. This scheme proved of enormous benefit to the university libraries for it inevitably brought to them the first fresh breeze of professional expertise and attitudes.

Further comment prior to the Osborn survey was contained in the report of the Committee on New Zealand Universities (1959) under the chairmanship of Sir David Parry, and it was largely as a result of this report that the injection of funds reflected in the rise in bookstock came about. It was also reflected in the increase in staffing and in the construction of substantial new libraries on five out of the six campuses. One result has been that for some years now the universities have had a very pronounced corner on the market for graduates of the New Zealand Library School, but it could be said that this development was not before time. The most recent survey of university libraries commissioned by the New Zealand Vice-Chancellors' Committee and published in 1972 makes further recommendations aimed at remedying the inadequacies of the past and plotting the future. It is worthwhile recording the terms of reference for this survey (4):

> To study and report on with recommendations for action where appropriate:
> 1. The adequacy for teaching and research of existing university library collections, viewed both individually and collectively, in the various subjects studied within the university system.

2. The adequacy of library collections for undergraduate needs, and whether any further special provision is needed.
3. The adequacy of library collections for postgraduate research, in view of the policy of the University Grants Committee that an increasing proportion of such research should be carried out in New Zealand.
4. Whether the university libraries have staffing adequate in number and quality to carry out their responsibilities within the terms of the enquiry.
5. Whether the requirements of major areas of graduate study can be met by the individual universities, given such present arrangements (if any) as exist for cooperative acquisition; and whether development of specialization in collecting in particular fields is desirable.
6. The role of the university libraries in the total library resources of the nation, and their relationship to the National Library and to the major specialized libraries, in acquisition policies.
7. Whether, in view of New Zealand's geographic position, special attention is required to improve the provision of bibliographical and other reference sources, including computer-based data banks.

It is to be hoped that the 25 recommendations contained in the report of the survey will be implemented. Indeed, not even the excuse of costs could be advanced for nonimplementation of some of them, but, writing in the New Zealand economic context of mid-1974 it is difficult not to be just a little gloomy about the immediate prospects.

The National Library

From its inception in 1910, one of the main objectives of the New Zealand Library Association (NZLA) was the establishment of a national library. The association's conference of 1911 passed a resolution urging that the General Assembly Library (the Library of Parliament, established in 1858) "be treated as a Dominion Library and thrown open as fully as practicable to the general use of the public." The association was back at it again in 1912 with a further resolution and it is tempting to believe that these two resolutions were responsible for summoning up the Science and Art Act of 1913, which announced in its clause 5 that "there shall be a Dominion Scientific and Art and Historical Library (hereinafter referred to as the Dominion Library) in the City of Wellington, within or adjoining the Dominion Museum." Nothing further ever seems to have been heard of this noble intention. The association, however, kept on. The Munn–Barr report took up the theme again in 1934 with a very firm recommendation that the General Assembly Library be developed as the National Library, taking under its wing the Alexander Turnbull Library (established in 1918) and the Library of the Royal Society of New Zealand. Ralph Munn saw the U.S. Library of Congress as its model. It is interesting to note in passing that the present chairman of the trustees of the National Library himself put forward a similar proposal 2 years before the Munn–Barr report, but he now presides over an institution of a very different character.

Though it may not have been evident then, the first concrete step toward the fulfillment of the national library dream came in 1938 with the establishment of the Country Library Service. Set up under the Department of Education, the CLS was designed to replace, at least partly, the earlier subsidies to public libraries—but more importantly to provide loans of books, by means of book vans, to the smaller and smallest libraries, where the local authority agreed to provide a free, rate-supported service. The assistance of the CLS was also available to institutions such as hospitals and prisons and to groups and individuals where the establishment of libraries was not practicable. Together with a subject and author/title request service, an advisory service, and the development of various categories of loans, this is still the pattern of the CLS, operating now from three regional offices, each with its own collections, at Hamilton, Palmerston North, and Christchurch. In 1942 the CLS inaugurated a basically similar service to schools, and 4 years after the CLS became part of the wider National Library Service (NLS) in 1945, its school service became in its turn a separate division of the NLS with the designation of School Library Service (SLS).

The SLS provides a service to both state and private schools and also to those public libraries serviced by the CLS. As with the CLS, the service consists of book loans, a subject and author/title request service, and an advisory service whereby SLS staff visit schools to assist in organizing bookstock and advise and train school staff in managing school libraries.

Two further divisions completed the body corporate of the NLS when they were called into being in 1946: the National Library Centre and the New Zealand Library School. The former maintained the essential bibliographical elements of a national library: the national union catalog of books, begun in 1941; and the national union list of serials, on which work had begun at the University of Otago in 1939. To these were added the *Index to New Zealand Periodicals,* begun in 1941; the *Current National Bibliography,* begun in 1950; and the retrospective national bibliography. Clearly the NLS gave more and more the appearance of offering the most likely base from which the national library dream could materialize. Before taking the matter further, however, it is necessary to look briefly at the other two major state libraries which, together with the NLS, ultimately formed the National Library of New Zealand.

The General Assembly Library was established in 1858 and was, for a brief period, run jointly with the Auckland Provincial Council Library. The library moved with Parliament to Wellington in 1865. While its primary purpose is to serve Parliament, its collections over the years have tended to become developed, in at least two important aspects, more in the sense of national collections. First, since 1903 it has been the copyright deposit library, with the result that it is very rich in New Zealand material; and second, it is the New Zealand center for international exchange and deposit schemes (although the Auckland Public Library is the country's second depository for United Nations publications).

The Alexander Turnbull Library was formed from the bequest to the Crown in 1918 by Alexander Horsburgh Turnbull of his extensive private collection of some

55,000 volumes, pamphlets, manuscripts, water colors, and engravings. Funds can never be said to have been adequate but nevertheless the library has been able to establish collections of world repute attracting international scholars, particularly to its New Zealand and Pacific collections, and especially recently, to its Milton collection.

Clearly these three libraries among them contained the essential elements for a national library: collections of research status and national bibliographical services. From this point of view it seemed the obvious thing to unite them. The idea was vigorously pursued by the NZLA and was supported by a Parliamentary Select Committee which reported in favor in 1958, and by the Royal Commission to Inquire Into and Report Upon the State Services in New Zealand which reported in 1962. In 1963 the government declared itself in favor of the proposal and announced its decision to proceed with amalgamation, allowing at the same time certain safeguards for the preservation of identity and service where necessary. The National Library Act was passed in 1965 and the National Library of New Zealand came into being in 1966. Under the legislation, the General Assembly Library and the Alexander Turnbull Library remain separate constituent divisions of the National Library.

It is one thing to pass legislation and to create an administrative structure: To make a library it takes, in addition to this, at the very least, a building. Probably the most frustrating factor since the passing of the act has been the absence of a building. As of the time of writing, however, things have never looked so good: A site has been allocated and cleared and a contract let for the first stage of the building (from basement to ground level) to be completed by December 1975. Meanwhile work on the plans for the second stage proceed, with expectation of completion of the entire building by the end of 1978, at a cost presently estimated at $10,000,000. (See Addendum.)

Besides the services outlined briefly above, the most recent development has been the establishment of a scheme to provide technical and scientific information to industries, firms, and other such organizations. Designated the Scientific and Technical Information Service (SATIS), the scheme has received government approval and staff positions have been allocated for the purpose of appointing technical advisers who will be seconded to a similar regional scheme already in operation in the Auckland area. (See below under "Special Libraries.") At the time of writing, the scheme has not gotten beyond this stage, though the broad outlines have been laid down. The relevant publication is listed in the bibliography.

The administration of the National Library is somewhat complex in that, while the National Librarian has direct access to the Minister of Education, he is subject for various purposes, including his book vote, to the permanent head of the Education Department, and enmeshed to a greater or lesser extent with the apparatus of that department. The Trustees of the National Library are advisory only and, according to the act, advise the Minister and not the National Librarian. The final ingredient in the mix is the Library Committee of Parliament, which is charged in the act with determining the services required by Parliament from the General

Assembly Library, with advising on the appointment of its Chief Librarian, and with electing two Members of Parliament to serve on the Trustees of the National Library.

Special Libraries

Apart from the libraries of the theological colleges, the legal profession and other professional associations, the Royal Society, and the special collections in such as the public libraries in Auckland and Dunedin, special libraries do not feature in the Munn–Barr report. This is not because others than these did not exist, but what did exist seem to have amounted to very little. Indeed as far as government department libraries are concerned, one of the tables in a recent survey indicates that at the time of the Munn–Barr report (1934) there were only about 15 of these in existence (5). Certainly the government departments have been grossly remiss—and numbers still are—in their understanding and use of, and support for their libraries as an information resource. A 1946 survey of 30 head offices and major branch libraries of government departments showed a total of 60,000 books and 45,000 serials. The report notes that "the book stock varies in coverage and recency and in some cases it appeared to be years since a title had been added to the shelves" (6).

When A. D. Osborn conducted his survey in 1959, the relative importance of government department libraries had radically altered the balance that existed in 1934. He says:

> At present, as before the Munn–Barr survey, the strength of New Zealand's special libraries will be found to lie in a comparatively small group of major institutions [among which he included the General Assembly Library and the Alexander Turnbull Library]. . . . They are Government libraries to a high degree with only a relatively small admixture supported by societies, museums and industries (7).

Apart from the library system of the Department of Scientific and Industrial Research, whose total resources were then in excess of 100,000 volumes, Osborn considered that there was "much work to be done to revitalise or rehabilitate Government libraries" (8). He considered the library of the Department of Health "one of the better Government libraries" but that of the Department of Agriculture "a study in administrative neglect and relative purposelessness" (9). Among government department libraries, those of the Department of Scientific and Industrial Research and the Health Department are probably still the best, and lamentably that of the Department of Agriculture has continued in a depressed state until very recently, when it appears to have begun to fall on better times.

In respect of medical libraries, Osborn found that of the University of Otago the best, with about 40,000 volumes and 600 current periodicals, but stated that it was very badly housed. Since then that institution has been rehoused in a new

and modern building; the Ernest and Marion Davis Memorial Library at Auckland hospital has metamorphosed out of the earlier Auckland Medical Library; and the Medical Library of the University of Auckland has been established. The Canterbury Medical Library has been given a much-needed shot in the arm and it is understood that the Wellington library is about to receive the same treatment.

In 1970 the National Library of New Zealand entered into negotiations with the National Library of Australia for an extension of the Australian MEDLARS service to New Zealand. A pilot scheme was run in 1971 and a regional scheme has been worked out whereby a specified medical library in each region checks and passes on MEDLARS research requests from its region to Canberra.

Engineering libraries continue to be important but have not grown to the extent of the medical ones. That of the Ministry of Works in Wellington is still the largest, followed by those of the schools of engineering at Canterbury University and the University of Auckland.

The libraries of commercial and industrial concerns, while still a very small part of the whole, are growing in number and importance, particularly in the Auckland region where there is the greatest concentration of secondary industries. A feature of the special library scene in Auckland is the Auckland Commercial and Technical Information Service (ACTIS), established in 1971. Based upon the collections of the Commercial and Technical Department of the Auckland Public Library and making use of other resources in the area, ACTIS is now a well-established service supported in part by membership fees, in part by the Auckland City Council, and in part by the National Library of New Zealand through its SATIS scheme. The aims of ACTIS are: to promote the use of scientific, technical, and commercial information by industry; to coordinate and strengthen commercial, scientific, and technical library resources in the Auckland region; to promote personal contact between those seeking and those possessing information; to encourage the formation of a field advisory service to provide practical assistance to industry and commerce; and to give special consideration to the needs of smaller firms.

Teachers' College Libraries

The Education Act of 1877 provided funds for the education boards in Auckland, Wellington, Christchurch, and Dunedin for the purpose of training teachers. Until 1967 the teachers' colleges continued to be administered by the boards, while policy and planning in respect of the colleges rested with the Education Department. From 1967 the colleges have been administered by autonomous councils.

As with government department libraries, so with those of the teachers' colleges; they do not receive even a mention in the Munn–Barr report. Osborn called the college libraries "adequate" but condemned the fact that no consideration was given

in the colleges to the part that school libraries could play in the teaching process. The fortunes of the college libraries, however, of which there are now nine, have fluctuated considerably, for a recent survey carried out by the NZLA indicates that few could now be described as "adequate."

In 1967 the New Zealand Teachers' Colleges Association requested the NZLA to draw up standards for college libraries. These were duly published and have been used to some effect by college librarians in presenting the case for improvement to their controlling authorities. There is no doubt that each of the libraries has improved to some extent in respect of the usual measurable entities, but the survey referred to above showed them to be, in most instances, considerably below the recommended standard. At the time of the survey they had, for instance, a combined bookstock of 254,000 volumes, whereas, based upon student rolls, the standard suggested a minimum of about 382,000. Since then, two government decisions have increased the pressures on the college libraries. These are (1) the decision to reduce the pupil/teacher ratio in the schools and (2) the decision to increase the length of courses in the primary (i.e., elementary) school teachers' colleges from 2 years to 3 years. The first requires a much steeper intake of student teachers and the second injects new elements, such as individual research, into the college programs. Presently in the air are proposals to widen the base of the teachers' colleges so as to include tuition for related and semirelated professional groups. In Wellington, for instance, education of kindergarten (i.e., preschool) teachers is to be undertaken at Wellington Teachers' College. All these moves have implications for the college libraries which do not appear to have been very thoroughly considered.

Following the survey mentioned above, submissions were made by deputation to the Education Department for the upgrading of the college libraries. The annual report of the NZLA for 1972–1973 states that

> although the deputation was well received it is far from clear what influence, if any [the submissions] may have on Departmental decisions. It seems that considerably more lobbying and publicity will be needed to achieve reasonable standards for these libraries.

Technical Institute Libraries

Technical Institute libraries receive no mention in Osborn's report, for the institutes are a relatively new phenomenon in the field of tertiary-level education. Their establishment and growth have been influenced very largely by the dramatic upsurge in apprentice education, but their courses are very much wider and diverse than would be required simply for the training of trade apprentices. Tables 5 and 6 (10) give some idea of the growth of student numbers.

Again, as in the case of the teachers' colleges, the technical institutes are administered by their own councils, but the Department of Education is responsible

TABLE 5

Apprentices Attending Technical Classes[a, b]

	1957	1960	1968	1972
Day classes	3,463	3,209	1,584	1,695
Block courses[c]	4,305	5,814	13,761	16,548
Evening classes	3,740	4,359	7,125	9,806
Technical correspondence	1,768	2,721	5,877	7,391

[a] From Ref. 10.
[b] Nearly all apprentices taking a correspondence course or attending evening classes are also required to attend day release classes or a block course.
[c] Block courses are usually of 40 hours a week for three weeks.

TABLE 6

Active Students Registered with the Technicians
Certification Authority[a, b]

	1955	1960	1966	1972
No. of students	45	1,833	7,662	26,000

[a] From Ref. 10.
[b] An "active" student is one with some success in the previous three years.

for policy and planning. Library provision, however, has had very low priority indeed, very much lower even than might be justified by the argument that a high practical content in many courses means that library provision is not as important as it would otherwise be. Indeed, one of the newest technical institutes operated for at least the first 3 years of its existence without a library at all, while in the others the handicaps of inadequate funds and staff make even a minimum service difficult. Writing in *New Zealand Libraries* in August 1973, Jane Coard states:

> The situation in newly-established regional institutes is that libraries are still not accorded priority in the institutes' development. Neither Southland nor Palmerston North [technical institutes] have a fulltime librarian or a library, and while New Plymouth has appointed a trained librarian part-time, it has not secured a library building.

In all cases the libraries are quite small, the largest being no bigger than the largest of the secondary school libraries.

In 1973, after a lengthy gestation period, the NZLA published a set of standards for technical institute libraries. Mrs. Coard in her article welcomes them. "What is needed [in the technical institute libraries]," she says, "is an infusion of aid to enable a take-off. Hopefully, with the implementation of the *NZLA Standards,* which are a modest start, this improvement should take place."

School Libraries

The story of school libraries is yet one more sad chapter in New Zealand librarianship. The Munn–Barr report stated:

> School libraries, as the term is understood in England and the United States,
> scarcely exist in New Zealand. . . . Most elementary schools have collections of
> books which only by courtesy can be called libraries . . . (*11*).

In 1960 A. D. Osborn, in commenting on the Munn–Barr statement said:

> The same cannot be said today but rather generally the situation is far from satis-
> factory. The shortcomings boil down to the unevenness of collections which range
> from very good to poor, an almost complete lack of school librarians, and a failure
> to schedule daily periods for the students—a failure that undoubtedly goes with
> the absence of school librarians (*12*).

More recently, in 1973, the then president of the NZLA, in referring to school libraries stated:

> these can only be said to exist if you are willing to define libraries as books in a
> location, with no librarians (*13*).

Recently the Department of Education has approved a policy of providing a library room for all primary schools over a certain size, while secondary schools qualify for a standard library building. There is no staffing allowance for primary school libraries, while for secondary school libraries the allowance relates only to clerical assistance for the teacher–librarian upon whose personal sense of dedication the success or failure of the whole scheme rests. Some of the library assistants are, indeed, people with professional training, but whether trained or not, the effective administration of the library—as well, indeed, as supervision of classes in the library—frequently falls to them for the simple reason that the teacher–librarian is either too busy or not sufficiently interested to have an effective role in the library. In primary schools the teacher–librarian must make do with assistance from pupils or parents.

In primary schools finance is available from a small per capita grant and from a dollar-for-dollar subsidy from the Department of Education. In secondary schools it lies within the authority of the principal to provide for library purposes a portion of a general "incidentals" grant from the department. Many schools, both primary and secondary, of course, tend to supplement these sources (depending on the enthusiasm of the principal) from funds raised in various ways by school committees or parent–teacher associations. One of the most significant features in the school library field is the assistance given to schools by the School Library Service (SLS), a description of which is to be found under the heading "National Library" above.

The main thrust of seemingly endless reports and submissions to the Education Department and other authorities by various groups including the NZLA, the

Post-Primary Teachers' Association, and the New Zealand Educational Institute relates to staffing of school libraries and the provision of a course in school librarianship. Recommendations concerning the latter point were also made by the Working Party on Education for Librarianship in its report in 1969, and a suggested curriculum was laid out for a course which might lead to the award of a Certificate in School Librarianship. The Working Party, however, also envisaged that at least in the larger secondary schools, qualified graduate librarians would find employment.

A report which is awaited with great interest is that of a survey which is about to be undertaken by Dr. Sarah Fenwick of the University of Chicago Graduate Library School. The survey is of library service to children and includes, of course, school libraries. The report was expected to be completed by the middle of 1975. (See Addendum.)

Education for Librarianship

The Munn–Barr report laid emphasis on the need to improve the professional standards of librarians. At the time of the survey very few librarians had any training at all. The report notes that "The Auckland, Christchurch and Dunedin libraries have been controlled in recent years by librarians who have been trained in British libraries" and that "in all these libraries the staffs have received such instruction as the librarian could pass on through the apprentice system." It goes on: "The secondary cities are less fortunate in their librarians. Timaru, Invercargill and Wanganui are the exception with librarians trained in one of the four major cities, while New Plymouth has recently appointed a former bookseller of promise" (14). The only formal instruction undertaken then and for a good many years afterwards was by those dogged souls who took the (British) Library Association professional examinations by correspondence, or the occasional one or two who studied at overseas library schools.

The first move toward better things came from the NZLA, with the establishment in 1942 of a general nongraduate course for library assistants, at the completion of which successful students would be awarded the certificate of the association. The course relied wholly upon there being sufficient senior qualified people to undertake the tutoring, which was carried out by correspondence. Since such people were scarce and the course was popular (42 students were admitted to the first course) and the time taken to cover it was 2½ years, the strain of maintaining the course became more evident as time went on. Finally, in 1949, it was decided to restructure the course to provide for 2 years of correspondence work (Part I) to be followed by a short course of formal instruction in Wellington (Part II). By this time the Library School had been established and the government agreed that the school would take over the tuition involved in Part II. The first students entered the restructured course in 1950, and those who passed the examinations at the end of

each of the 2 years of Part I entered the 6-week course at the Library School in 1952. (The 6-week course was later reduced to 5 weeks.)

The further (and up to the point of writing, final) development in the association's course came in 1966, by which time the association had serious misgivings about its ability to continue to find sufficient people willing to undertake the tutoring and examining entailed in Part I of the course. Besides this there was the very considerable job for the association's small full-time office staff in organizing and coordinating these activities.

In 1966, therefore—the National Librarian having offered to take over the tuition for the association's course—a course of an entirely different structure began. In this course, which is still the association's course, the student enters for a Preliminary Examination, in preparation for which he studies material provided by the association. On passing the Preliminary Examination, which is conducted by the association and held in April each year, he proceeds to a series of three 4-week courses at the Library School. The first of these he attends in the August–September period of the Preliminary Examination year, the second in the May–June period of the following year, and the third in the January–February of the next year. He emerges, provided he has been successful at each stage, with the certificate of the association. From the time of entry for the Preliminary Examination to the completion of the course is a period of 2½ years. The entrance requirement for the course is the same as the entrance requirement to an undergraduate course at the university, viz., the University Entrance Examination. The course is designed particularly for those who will serve at intermediate levels in libraries, but there are numbers of persons with certificates who hold controlling positions, particularly in the smaller public libraries and in small special libraries. The figures for 1969, taken from the report of the Working Party on Education for Librarianship, are as typical as any. Table 7 shows the students who were then at some point in the course between having entered for the Preliminary Examination and being awarded their certificates.

Table 8 gives the number of students completing in each year of the course since 1946.

Graduate library education began in 1946 with the setting up of the Library School as a division of the then National Library Service. Provision was made for up to 30 places to be provided for university graduates who, after slightly more than a normal academic year of study would, if successful, receive the diploma of the school (Dip. NZLS). Provision was also made for nongraduates to be admitted in special circumstances; they would receive the certificate of the school (Cert. NZLS). The allowable number of places was increased to 40 in 1965. The students were (and still are) paid an allowance by the government equal to that paid to students at secondary teachers' colleges, currently (mid-1974) as follows:

Graduates with degrees requiring a minimum of 3 years of study	$3,880
Graduates with degrees requiring a minimum of 4 years of study	$4,433
Graduates with degrees requiring a minimum of 5 years of study	$4,963

TABLE 7

Students, by Type of Employing Library, Currently Taking the Course, or
Preparing for It, as of August 25, 1969[a]

Type of library	Sections 2C/3C	Sections 4B/5B	Sections 6A/7A	Totals A/B/C	Preliminary Examination April 1970[b]
National Library of New Zealand					
Central Division	—	3	7	10	2
General Assembly	1	—	1	2	1
Alexander Turnbull	—	—	—	—	1
Country Library Service	4	2	8	14	5
School Library Service	3	4	9	16	11
TOTALS	8	9	25	42	20
Other government departments	6	7	10	23	13
Schools	1	2	3	6	1
Teachers' colleges	2	2	2	6	1
Other special	3	1	—	4	6
University	7	5	13	25	13
Public	22	27	36	85	77
Overseas	—	—	—	—	3
TOTALS	49	53	89	191	134

[a] Students shown in Sections 2C and 3C will complete the course this year, students at present in 4B and 5B will complete next year and students at present in 6A and 7A will complete in 1971 (15).
[b] Provisional only. Does not include late applications closing October 31, 1969.

TABLE 8

Year	Number of awards	Year	Number of awards
1946	15	1960	38
1947	18	1961	40
1948	14	1962	39
1949	12	1963	41
1950	8	1964	40
1951	9	1965	86
1952	19	1966	33
1953	15	1967	69
1954	16	1968	40
1955	21	1969	49
1956	10	1970	43
1957	24	1971	60
1958	22	1972	60
1959	31	1973	65
		TOTAL	937

In return for the allowance, students are required to undertake to spend 1 year in full-time professional work in a New Zealand library.

After application, students are chosen on interview by a panel consisting of the National Librarian, the Director of the School, and a representative of the NZLA. Table 9 lists the numbers graduating from the school since its inception.

The current academic staffing establishment of the school provides for a director, two senior lecturers, four lecturers, and a librarian/tutor. The academic year, spread over three terms, begins in late February and ends in early- to mid-December. The 37 formal weeks of study include 3 weeks of practice work at the beginning of the third term, in selected libraries throughout the country. Typically, 12 to 15 hours per week are spent in formal lectures and discussions, and 25 to 28 hours on preparation and work arising from the formal periods. In the third term, 3 weeks are assigned to the preparation of a bibliographical project. Some of these

TABLE 9ᵃ

Year	Diploma	Certificate	Total no. of awards
1946	26	3	29
1947	21	4	25
1948	18	7	25
1949	16	5	21
1950	12	3	15
1951	11	6	17
1952	14	2	16
1953	11	3	14
1954	13	1	14
1955	9	3	12
1956	10	3	13
1957	10	2	12
1958	13	3	16
1959	11	1	12
1960	16	2	18
1961	8	3	11
1962	8	2	10
1963	18	1	19
1964	19	2	21
1965	25	—	25
1966	24	1	25
1967	28	—	28
1968	35	—	35
1969	35	—	35
1970	40	—	40
1971	38	—	38
1972	39	—	39
1973	38	—	38
TOTALS	567	57	624

ᵃ These figures do not include overseas students.

have turned out to be quite important pieces of work and have been formally published. A further 6 weeks in this term are devoted to specialization in various optional subjects.

The concern as to whether the Library School was correctly placed as a division of the National Library, rather than in the university, was an early one in the NZLA. A remit proposing that the school be transferred to the then Victoria University College was included on the NZLA Conference agenda in 1950. A further remit on the topic came up again 10 years later. The remit was narrowly defeated, but 3 years later the council of the association, in formulating association policy on the matter stated: "The Association believes that . . . a university school would be able not only to improve the quality of library education but also to raise the status of librarianship as a career" (16). A further council document of 1966 explored the proposed university school in more detail and proposed a two-tier solution, viz., the graduate course at Victoria University of Wellington and the nongraduate course at the National Library. This proposal received a positive response from the Vice-Chancellor of the University, but the Minister of Education, in opening the association's 1967 conference stated that he did not wish to see two schools. He allowed, however, that there could be a case for setting up a small group to report to him on any needs for changes in the pattern of library education.

Finally, in 1969, the Working Party on Education for Librarianship was set up. Its terms of reference were to "report to the Minister on the present facilities employed in education for librarianship and on any changes deemed necessary for fully effective provision for the library needs of New Zealand having regard for available resources and the cost of alternative measures" (17).

The Working Party received submissions from 61 persons, organizations, and institutions and reported by the end of the year. The chief recommendation in the report proposed the setting up of an autonomous institution to be called the New Zealand College of Librarianship, to conduct courses at all levels. The staff of the college were to "be of high quality and have the confidence of the University." In addition, the Working Party recommended that "in association with the Victoria University of Wellington an Advanced Course be established providing for a further academic year's study beyond the present post-graduate diploma and leading, if the University agrees, to a University awarded degree of Master of Library Science" (18).

The NZLA gave the report qualified support on three grounds:

1. The proposal would free the school from direct governmental control.
2. A proposal to have the NZLA represented on a proposed Board of Studies would involve the profession more closely than had hitherto been the case.
3. A link would be established with the university which might later be developed further.

Victoria University, however, did not support the proposed college and countered with its own proposal to undertake all courses, including the nongraduate. Discussions subsequently took place in early 1971 among the National Library, the

NZLA, and Victoria University. However, the University Grants Committee found the university proposal (which included nongraduate instruction) unacceptable. The university therefore submitted a further proposal to the Grants Committee relating only to graduate education. Discussion then centered around the alternatives for the association's own (nongraduate) Certificate Course, but very little progress was made. Further talks convened by the Department of Education took place in the latter part of 1972 and included representatives of the National Library, the NZLA, the University Grants Committee, and the State Services Commission, which is the central government staffing agency. The year 1973 passed with little activity in the matter, except that the university put more detailed proposals to the University Grants Committee, while the possibility of the school moving to one of the technical institutes was canvassed within the Department of Education. By early 1974 yet another possibility had entered the lists—again, presumably, on the initiative of the Department of Education. This was that the school should be based on Wellington Teachers' College, with links to the university. A modification of this proposal suggested by the NZLA, viz., a joint University/Teachers' College Institute of Library Education is currently (mid-1974) being studied by the various bodies concerned. (See Addendum.)

The New Zealand Library Association

The New Zealand Library Association (NZLA) was established in 1910 as the Libraries Association of New Zealand. As such it was essentially an organization of controlling authorities of libraries and, in the main, of public libraries. Small though it was—minute in fact—this early association was notable for the strength of the delegates who personified it and the farsightedness of its discussions and recommendations. Perusal of the proceedings of the early conferences held in 1910, 1911, and 1912 shows a real awareness of vital issues: papers, for example, on traveling libraries, children's libraries, a national library, and free library service. For 12 years or so after the third conference, however, the association was largely inactive and only came to life again upon the calling of the fourth conference in 1926.

The rejuvenated association was still unable to make very much impression on the central issues identified by its early conferences, but clearly its most important work was what it did to bring about the Munn-Barr survey in 1934 and in publishing the report of that survey. The profound effect that the recommendations of this report had on libraries has been alluded to. The association itself, however, did not escape comment from the surveyors, and in their final recommendation they set forth numerous activities in which the association should engage.

The challenge contained in the Munn-Barr report, however, could not be adequately met by an association consisting only of institutions. In 1935, therefore, the constitution of the association was changed to admit individuals to membership and the two types of members—personal and corporate—have coexisted in the one

association ever since. While there have been isolated murmurings within the association from time to time in respect of this dual membership, a discussion on the topic at a recent conference of the association showed clearly that the present members have no desire for change in the basis of membership. For the NZLA, then, there is no doubt that at least for the foreseeable future, a purely professional association is out of the question.

To mark its changed nature, the association adopted, in 1935, the name by which it has been known ever since: the New Zealand Library Association, and it was under this name that it was duly incorporated by the New Zealand Library Association (Incorporated) Act, passed by Parliament in 1939.

The business of the annual meeting of members (which might be expected to constitute the supreme body of the association) is, in fact, limited by the rules of the association to consideration of the annual report of the council and the audited accounts; to proposals to change the rules of the association and the rates of subscription; and to proposals, as the rules put it [Rule 49 (g)], "concerning the administration of the Association or the definition of future policy with reference to specific action by the Association." It is left to the council to determine whether the subject matter of a notice of motion for discussion at the annual meeting falls within the scope of the annual meeting or not. It is also the business of the annual meeting to elect the officers of the association, viz., the patron, president, vice-president, etc.

The council, therefore—consisting of elected officers of the association, the elected representatives of the various membership groups, and the immediate past president—is, in practice, if not in theory, pretty well the supreme body of the association, though it would be a very bold council indeed which would dismiss a remit from the association's conference. The committees of the association are appointed by the council and report to the council while the association's office and small staff service all organs of the association, as well as the membership at large. Members, as such, are grouped according to geographical location (to form the branches) and according to interest groups (to form the sections). Currently there are seven branches: Auckland, Waikato, Hawkes Bay, Palmerston North, Wellington, Canterbury, and Otago; and six sections: Children's and Young Peoples, Local Authorities, Professional, Public Libraries, Special Libraries, and University and Research. As far as the administration of the association is concerned, however, the link between council, on the one hand, and the branches and sections on the other, is quite tenuous, consisting mainly in the granting of funds by council to branches and sections and the furnishing of reports and audited accounts by branches and sections in return.

If recent proposals accepted by council are agreed to by the association at its annual meeting in February 1975, there will be substantial changes in the structure just outlined. A special committee set up in 1971 to investigate the structure, functions, and activities of the association, and to make recommendations on any necessary changes, recommended that branches should be directly represented on the council and that their powers be widened and their finances strengthened. In

discussing the sections, the committee was of the view that type-of-library sections seemed to have a useful function to fulfill, but others (viz., Local Authorities Section and Professional Section) did not. In respect of the former, the committee had no recommendation to make but said that the latter should be renamed the Professional Division and should take over the functions of some of the committees of council (e.g., the Committee on Cataloguing and Classification) and generally should initiate and develop technical–professional matters. Probably the most important recommendation concerned the proposal to appoint a reasonably highly salaried executive officer but it is yet to be seen whether the membership will accept the higher fees that this will entail. (See Addendum.)

Growth in the membership of the association has been constant but not spectacular. Table 10 shows the growth in membership over the last 10 years.

The interesting thing about these figures is the increase in personal membership (66%) as compared with that in institutional membership (27%). In respect of institutions, of course, there is an important incentive in that membership is a necessary prerequisite to participation in the nationwide interlibrary loan system. Most institutions with libraries, therefore, are anxious to join and, of course, the association is glad to have their membership fees! The association is not entirely materialistic in the matter, however, and insists upon certain minimum standards for the institution's library in relation to bookstock, staffing, and finance. In respect of personal membership, on the other hand, the numbers eligible for membership are very much in excess of those who are in fact members, the only groups required to be members being those who wish to undertake the association's certificate course and those who apply for the associateship.

The activities of the association have been, and continue to be, many and varied. Its involvement in library education has been dealt with to some extent in the discussion on that topic, but the record is not complete without reference to the scheme of registration for those with both formal qualifications and proven

TABLE 10

	1963		1973	
	Members, by category	Total	Members, by category	Total
Personal members				
Honorary life members	10		7	
Ordinary life members	3		2	
Ordinary members	857		1,427	
		870		1,436
Institutional members				
Local authorities	132		142	
Others	209		291	
		341		433
TOTAL		1,211		1,869

performance. The necessary criteria are expressed in the registration rules which provide for two awards: Associate of the New Zealand Library Association (ANZLA) and Fellow of the New Zealand Library Association (FNZLA). The former indicates "that the grantee has the necessary academic or similar qualifications and has demonstrated in the practice of his profession that he possesses the knowledge and judgment required for the higher branches of librarianship"; the latter is "the highest title of merit in the gift of the Association."

While, in the New Zealand industrial relations context, the association is not recognized as a negotiating body for salary purposes, it has nevertheless been concerned in the matter of salaries and conditions. Its greatest achievement in this area has been the drawing up of a standard salary scale. While the scale is in no sense a mandatory one, it has had a marked effect in that libraries know what they need to pay in order to attract good staff, and librarians know what they should expect to be paid. Each vacancy listed in the association's monthly *NZLA Newsletter* is graded according to the scale, so that possible applicants can judge for themselves whether the salary offered is adequate or not.

Other activities of the association have been referred to in discussion on other topics, such as school libraries and the National Library. Further detail is contained in items listed in the bibliography.

Addendum

The National Library: As of June 1976, stage one of the building is behind schedule and unlikely to be completed until later in the year. In addition, the government has decided that, upon completion of stage one, no further financial commitments are to be made in the 1976/77 financial year. Moreover, there is to be a further review before stage two (i.e., completion of the building) is to proceed. It would now seem unlikely, therefore, that the building will be completed before about 1982.

Report on Library Service to Children: The text of Dr. Fenwick's report was duly published and is cited in the bibliography; the volume of accompanying tables is expected to be published later in 1976. The report makes specific recommendations about school libraries: first in respect of staffing, then resources, and thirdly, buildings and facilities. Dr. Fenwick regards the staffing element as the most important and states that "on the development in this area depends the improvement of all other facets of library services in schools" (*19*). Further recommendations which support this relate to the establishment of programs for the professional education of school librarians.

The report is an excellent document. If its recommendations are given serious governmental support they will provide a real take-off for this most blighted of sectors in New Zealand librarianship. Certainly from the interested professions—the NZLA, the New Zealand Educational Institute and the New Zealand Post-Primary Teachers' Association (the former the national association of primary

school teachers and the latter its secondary school counterpart)—the response has been very favorable. A joint committee composed of representatives of the three bodies was set up by decision of the NZLA Council in May 1975. Its first concern was to ensure that the report received maximum publicity and discussion, and further activity in this regard will be generated following the publication of the statistical tables. The committee is currently working toward establishing a program for implementation of the recommendations which the three associations are considering taking up as policy, especially those on the staffing of school libraries.

The Library School: The proposal concerning the Institute of Library Education was subsequently approved by the governing bodies of both the Wellington Teachers' College and Victoria University of Wellington, but as of June 1976 a decision by the government is still awaited. It is strongly suspected that the state of the economy will now serve as a convenient excuse to delay yet again the resolution of what must surely be the most talked-over issue that has ever had the misfortune to receive the scrutiny of New Zealand officialdom. That being so, there will clearly be no alternative to the National Library's having to shoulder the burden for a few more years to come.

The NZLA: The proposals relating to the restructuring of the association were duly adopted at the annual meeting of the association in February 1975 and the necessary changes to the rules of the association were made. More importantly, though, the annual meeting went on to agree to the near-50% increase in fees which would be necessary if the changes which had been approved were to be effective. In particular it was necessary to ensure that the association would have sufficient income to sustain the employment of a reasonably high-level executive officer and provide him with the means to carry out his work. There were those who considered the price too high and forecast substantial membership losses. This was a risk, of course, which had to be taken but the level of incoming fees at the beginning of the new financial year in October 1975 indicated that the right thing had been done. Indeed, well before that date the council had decided to call for applications for the position of executive officer and an appointment was made in November, the appointee taking up his post in February 1976. Membership statistics at the end of June 1976, when there took place the annual removal of members who had not paid since the beginning of the financial year, showed only a very slight decrease in total numbers. With that major overhaul behind it, therefore, we should now see a new period of effectiveness for the association.

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H. DE S. C. MACLEAN

NEWARK PUBLIC LIBRARY

The idea of free public libraries is closely connected with the movement for publicly supported education which characterized the 19th century, particularly the latter half. Enabling state legislation and voter approval led to the establishment of public libraries in many cities, Newark among them. In May 1888, the Board of Trustees of the Newark Free Public Library met for the first time to organize what a local newspaper proclaimed ". . . is to be a people's library . . . ."

Basic to any library is the book collection. Under the guidance of Frank P. Hill, appointed as the first librarian, the new institution bought from the defunct Newark Library Association 10,000 carefully selected books and periodicals of permanent value. Mr. Hill guided the cataloging and preparation of these for the shelves, delaying the opening of the library until he felt that the collection and services were really ready. For the first 12 years Mr. Hill did much to lay the foundations of library service to the city. Notable were: acquisition of books in French, German, Italian, Polish, and Lithuanian; directories of 65 cities; classroom libraries in the schools; traveling libraries and deposit stations throughout the city; open access to stacks, except for fiction; special service to children. During this period, a new building was erected at the north end of Washington Park, which still serves as the main building, though remodeled. The building opened on March 14, 1901, and in May, Mr. Hill resigned to go to the Brooklyn Public Library. Beatrice Winser, Mr. Hill's assistant, acted as librarian until John Cotton Dana came to the library in January 1902.

From 1902 until his death in 1929, the name of John Cotton Dana and the Newark Public Library were almost synonymous. Building on his experience in Denver and Springfield (Massachusetts), he did everything he could devise to make Newarkers realize what the library could do for them. Booklists, articles, bookplates, and regular and occasional publications were issued on all sorts of topics which were or might be of interest to the people of the city. Exhibits were installed —for example, one of the first in the state to feature American artists—extensions were set up where interest could be encouraged; a library print shop influenced the quality of local commercial printing; pictures and reproductions of paintings were made available for loan; collecting material on the city, county, and state encouraged the study of local history; delivery service of library materials to the schools was arranged with the Board of Education; branches were established—the most notable the Business Library in 1903, the first of its kind in the country to take special note of the businessman's needs. Acting on the premise that books reflect change in thought and attitude, Mr. Dana bought material which he admitted he did not understand, but felt would be important in the future. Musical scores were added to the collections when the needs of music students in the city became great enough. Building on Mr. Hill's carefully laid foundations, Mr. Dana did everything he could think of to make Newarkers aware of what the library could offer and made librarians everywhere more cognizant of what could be done on the premise that "Print is a tool for all men's hands."

Mr. Hill had been aware that a library should have special service to children in the library building as well as through the schools, and Mr. Dana came from Denver where he had set up what seems to have been the first separate children's room. Each city-owned branch had its separate room for children with books for all levels of reading ability and programs to interest younger citizens. Newark was one of the first to have programs for preschool children, where the mothers gathered for talks or discussions, while the little ones had stories, games, and a chance to borrow books from the Little Children's Corner. Summer programs have included story hours in the parks and in the branch gardens, reading clubs, and arts and crafts sessions.

Beatrice Winser succeeded Mr. Dana just as the Depression started. This period put great pressures on the library. Budget cuts curtailed hours of service, growth of book stock, and development of branch services, and caused loss of the newly established bookmobile service. The physical deterioration of the building made it necessary to carry on some library functions outside; the Children's Room, school service, and the Art and Music Department were moved to quarters in the Museum annex. It was a time for making the best of a difficult situation.

As the Depression lifted, World War II posed different problems. Newark is a transportation center with great diversity in industry and a population with a wide variety of skills. Because of these factors, war industries, government agencies, and special branches of the armed services located in the city. The library became a war information center, with telephone and personal service on new appointments, agencies, regulations, etc. A special assistant visited factories and other agencies to provide help, such as books and instruction manuals to workers and supervisors. A gift of music records was made to the library in 1940, which was widely used by people under war-time strain. Miss Winser retired in September 1942, though she continued for five more years to act as director of the Newark Museum, which had started in the library, but moved to its own building just a block away.

In April 1943, John Boynton Kaiser came from the Oakland (California) Public Library. His great contribution to the Newark Library was the establishment of modern administrative principles and business practices suitable for the more complicated operations of the library. A survey defined staff positions and suggested salary scales commensurate with responsibilities and training. So, the principles and practices of personnel and administration for the library since his time were established.

Another great need was for space. A building program was outlined for implementation as soon as funds became available after the war. This project was under the direction of James E. Bryan, assistant director, who had come from Pittsburgh 3 months after Mr. Kaiser's arrival. In 1952, when the program was completed, there was a new maintenance building (which had an added floor in 1972) and all departments were back in the main building. In the remodeling, space was made so that specialized reference services could be developed under the direct supervision of staff with particular competence in different subject fields:

social science and labor; science and technology; education and young adult service; art and music; government documents; children's and school services; New Jersey reference; as well as cataloging, acquisitions, registration, and receiving. (Business reference was centered in the Business Library in its own building nearer the heart of the business community.)

New quarters for the New Jersey Room brought together books, pamphlets, documents, pictures, maps, and clippings of both current and historic interest, organized and exploited by staff with particular interest and skill in the subject. An oral history project was started to preserve information about the past of the city. Since indexing of New Jersey materials was needed, staff members initiated new indexing projects or continued those already started, such as the illustrations index which began with help from a Works Progress Administration project in the library. The development of this collection has been notable, especially since the files of clippings, pictures, etc., from the defunct *Newark News* were acquired in 1973. (In its first year of availability requests for information averaged 100 per month.)

After the war, there was resurgence of interest in adult education. The auditorium on the fourth floor was remodeled and made available for concerts, lectures, film programs; smaller meeting rooms for discussion groups and other community purposes. Three galleries provided space for exhibits, and the new facilities for the Richard C. Jenkinson Collection of Finely Printed Books gave an opportunity to show different facets of typography and design. Concurrent with the urge for knowledge, there was expansion of formal educational courses in the city. Newark State College (now moved to Union), Newark School of Fine and Industrial Art, and the Newark College of Engineering continued to offer instruction; the college of pharmacy, the law school, and the University of Newark were absorbed into the Newark campus of Rutgers—the State University. Essex County College and New Jersey College of Medicine and Dentistry at Newark were begun. In common with the other urban centers, Newark was meeting the need for all kinds of education, whether for formal degrees or as part of lifetime learning.

The expansion of educational needs challenged the Newark Library to provide service at many levels. From its beginning, the library had tried to build its collections with both present and future needs in mind. But with the expansion of knowledge and its users, library leaders in the state saw the need for closer cooperation among libraries for better statewide service. James E. Bryan, who had succeeded Mr. Kaiser as director in 1963, worked closely with the New Jersey Library Association, the state government, and other interested people and agencies to set up a library network to give quality library service to any citizen of the state. Steps were outlined so that referral from small libraries to larger and then to specialized collections could be made with ease and dispatch. The Newark Library was made an area library with obligations to specific small libraries in 1965. It was selected to set up reference and referral service in 1968, and was designated Metropolitan Regional Reference Center with special emphasis on business and art in 1969. Under these heads, it has greater obligation to share its expertise directly through interlibrary loan, workshops, training programs, and consultations.

Deposit Stations to Outreach

Collections of books were set up in stores and other outlets as early as 1894, later in firehouses and in the high school. When Mr. Dana came, branches were established in the Roseville, Springfield, and Ironbound areas using rented quarters.

These were closed during World War I. After this, branch libraries were housed in city-owned buildings, the first being the Springfield Branch in 1923, until nine (including the Business Branch) served the people of Newark. In 1952 and 1955 cooperative community branches were established in two of the newer schools, jointly operated by the Public Library and the Board of Education. Book collections were put in factories, hospitals, housing projects, and other places where people might use them. As needs changed and other community organizations were established, branch librarians and peripatetic assistants served in many neighborhood areas. A bookmobile went around the city on a regular schedule, carrying on the mobile book service which had been discontinued during the Great Depression. Recently, starting in 1972, a small, brightly colored van called the "Roving Reader" staffed by three assistants (including one Spanish-speaking) has cruised the inner city during the summer, bringing books, motion pictures, and records directly to areas which have not been served before. This experimental program has been funded with federal grants. Under consideration is the use of an easily erected structure to house library and community activities, as a step in serving those who find difficulty in patronizing branches and other library outlets. The special needs of the Spanish-speaking population resulted in a demonstration collection of books on topics such as baby care, health problems, etc., used by social service workers in the city to help their clients. It is also used by librarians from other cities which face a similar situation. Foreign languages had long been part of the collections but the number of languages included in the book stock has risen to meet the needs of new groups in the city, wherever convenient for use.

Summary

From a city library with service primarily meant for the people of Newark, to a prominent place in a statewide network of library and information centers, the Newark Public Library has been fortunate in the citizens who have served on the Board of Trustees, and who have worked closely with the librarians who directed the day-to-day operations of the library: Mr. Hill, who laid the foundations of the collections and guidelines for service; Mr. Dana, who expanded the whole concept of public library service; Miss Winser, who carried on during two most difficult periods; Mr. Kaiser, who reorganized the administration of library operations and whose term covered the building program; Mr. Bryan, who saw the need for and helped work out the statewide concept of library service; and the present director, J. Bernard Schein, appointed in 1972, who has been very much alert to current problems. As new needs arise, the Newark Library has more than three-quarters of a century of experience in identifying and moving to meet them.

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JULIA SABINE

THE NEWBERRY LIBRARY

The Newberry Library is a privately endowed, independent research library situated on the near north side of the city of Chicago. Concentrating in history and the humanities, its holdings comprise some 1,250,000 volumes, 5 million manuscripts (including 1,517,912 cataloged items, two railroad archives, and the archives of the Pullman Company), and 10,050 historical maps (as of 1975). The collections embrace Western civilization from the late Middle Ages to the end of the Napoleonic era in Europe; from the era of discovery to the age of revolution in Latin America; and to modern times in North America.

The Newberry is incorporated under the laws of the State of Illinois as a "free public library" and is governed by a board of trustees headed (1975) by Mr. Edward F. Blettner, chairman of the board. Staff administration of the library is under the direction of the president and librarian (Lawrence W. Towner), vice president (James M. Wells), director of library services (Joel L. Samuels), director of research and education (Richard H. Brown), and controller (Lawrence C. Hodapp). It has a staff of 81, including 39 professional scholars and librarians.

The clientele of the library is largely scholarly in character, although one department (Local and Family History) is heavily used by the general public. The library as a whole is freely open to scholarly readers, lay and academic alike, although persons whose training is below the master's degree level generally use it as a library of last resort.

To know the history of the Newberry Library is to understand its collections and its character. Unlike its nearest analogs, the Folger Shakespeare Library and the Henry E. Huntington Library and Art Gallery, both based on great collections gathered by their founders, the Newberry Library began, *de novo*, as a collection of money made available in the great era of institution building during the Chicago Renaissance.

Walter Loomis Newberry, under whose will the library was founded, died at sea in 1868. He had been an early Chicago pioneer involved in shipping, commerce, banking, and real estate, the latter being the true foundation of his bequeathed estate. It was not, however, until the death of his two surviving daughters, Mary and Julia, and later, in 1885, of his widow, Julia Clapp Newberry, that a contingent provision of his will, providing for a library, became operative because his children died without issue. Half of his estate was assigned to the purpose.

The then-surviving trustees of the estate, William Henry Bradley and Eliphalet W. Blatchford, proceeded to establish the library, hire its first librarian, William Frederick Poole, get it incorporated in 1892, and construct the present building at 60 West Walton Street, whose architect was Henry Ives Cobb. Thus, neither Newberry himself, nor any of his direct descendants, ever saw the library or the library building which bear his name.

Events—equally real and symbolic—between Newberry's death in 1868 and the death of founding librarian Poole in 1894 significantly shaped, and still shape, the Newberry's collections and its character. First, the Chicago Public Library was established, in 1876, so that the Newberry trustees in 1887 were free to create a reference and research library, rather than a circulating library. Second, shortly after the Newberry opened its doors, the John Crerar Library was established, in 1893. Between them, the trustees of the Newberry and the Crerar shortly divided up the world of knowledge then deemed relevant to reference libraries; and the Newberry disposed of its materials in medicine, science, technology, and the hard social sciences, such as they were in those days, focusing more sharply on the humanities, and establishing a traditional willingness to dispose of duplicate and out-of-scope materials. The Chicago Public Library, in addition to general circulating library responsibilities, also agreed to collect in business, law, patents, and fine arts. The third event was the purchase by the library of the rare book collection of Henry Probasco of Cincinnati, in 1889, before the library had opened its doors. This collection, some 2,500 volumes, purchased for $52,924, included incunabula, Shakespeare folios, and other rarities. The library would henceforth collect rare books as well as more general reference materials.

While the purchase of the Probasco collection certainly established rare books as a field of collecting at the Newberry, by both individual and en bloc acquisitions (as late as 1964, an even greater collection than Probasco's, that of Louis H. Silver, was also purchased), the Edward E. Ayer Collection is more characteristic of Newberry acquisitions, because it focuses on a broad subject field rather than on books as artifacts, even though it contains thousands of rarities. Ayer was a member of the first board of trustees. An avid collector of works relating to the pioneer period in America, he extended his collecting back into Europe and the age of discovery; southward to Central and South America; and westward to the coast, to Hawaii, and the Philippines—always focusing on the early contacts between aboriginal peoples and the European; and on discovery, settlement, and emergence to statehood—a major theme running throughout all the Newberry's Americana collections. He gave his collection (then about 14,000 volumes) to the library in 1911,

continued to add to it himself, and later provided for its maintenance by endowment funds, until today it numbers over 85,000 volumes, some 65,000 of which have been chosen by successive curators and bibliographers. It is a true, and great, research collection.

Ayer's gift also attracted other collections of note, closely related in subject matter. First came Trustee William B. Greenlee's excellent gathering of working books on the Portuguese empire to about the 1830s, a gift in 1937, with a small endowment later established by his widow. Subsequently, Trustee Everett D. Graff bequeathed his notable collection of Western Americana, along with a purchase fund, in 1964. These gifts and bequests were followed by the purchase of the Frank Cutter Deering collection of early Americana which, among other fields, increased the Newberry's Indian captivity narratives by 50%, making it the best in the world, and the Franco Novacco collection of 16th-century Italian printed maps (1967), which fit well with Ayer's early map collecting.

The decision of the early trustees and the first librarian to shape the collections by transferring out-of-scope books to the John Crerar Library also took root and flourished, in part because the purchase of collections resulted in duplicates and out-of-scope materials, in part because the library sought and still seeks to avoid competition with major libraries in its community, and in part because the explosion in scholarship and publication now places an immense burden on private libraries with limited means.

Thus the Newberry has never hesitated to dispose either of duplicates or of books deemed outside its scope. Four examples from the 1960s well illustrate this continuing practice. In 1965 and 1966 the library sold duplicate and out-of-scope materials in two great sales at Sotheby's (Silver duplicates) and Parke-Bernet (Graff duplicates). In that same period it sold en bloc, to a university library, a major collection it had bought in Europe shortly after World War II, some 5,000 titles in Russian history. Finally, in 1967, after purchasing the Deering collection, the library disposed of a substantial number of duplicates through the Chicago house of Kenneth Nebenzahl, Inc., thus recovering a significant portion of its purchase price.

Free both to buy collections en bloc (or receive them as gifts or bequests) and to sharpen the collections by disposal of unwanted items, a long series of librarian–scholars was encouraged to build massive subject-oriented collections—in the history of printing (the John M. Wing Foundation which holds, for example, most of the library's nearly 2,000 incunabula), the history of cartography, the history and theory of music, the Italian Renaissance, colonial Brazil and other Latin Americana, the history of the family, local history, and the history of Indian–White relations, to name only a few of the stronger areas of collecting. At the same time they built and maintained a solid foundation in the general history and literature of the areas and periods in which the more specialized collections fell. Bibliographies, journals, documentary sets, monographs, biographies, publications series of learned societies, antiquarian and out-of-print works, modern works,

and newspapers all helped make the library a complete reference and research library in its fields as much as a collection of collections.

One cannot but make invidious distinctions by listing only representative bibliographers and curators who shaped the collections. Yet no history, however brief, would be complete without at least emphasizing the role of the staff by mentioning a few. Poole, himself, was a highly organized builder of collections and cannot be left out. But Pierce Butler, Lloyd Lewis, Ruth Lapham Butler, Felix Borowski, Ernst Detterer, Gertrude Woodward, Joseph C. Wolf, Hans Baron, Frederick Arthur Holden Hall, Mabel Erler (Pargellis), Stanley Pargellis, and Donald W. Krummel—to list a few no longer at the library—illustrate the point that the Newberry is a collective endeavor, not the shadow of any one man, except perhaps of Walter Loomis Newberry, himself.

By the early 1940s, the chief librarians—William Frederick Poole, 1887–1894; John Vance Cheney, 1894–1909; William N. Carleton, 1909–1919; and George B. Utley, 1920–1942—had directed the building of a very substantial collection of some 900,000 titles. Their successor, Dr. Stanley Pargellis, 1942–1962, an historian trained at Oxford and Yale, and a great bookman, perceived for the library three tasks building on those collections.

First, Pargellis sought to augment the collections, building primarily on already developed strengths. In doing so, he bought imaginatively and well, taking advantage of the books and manuscripts available at low prices in postwar Europe and England. Second, he reversed a long-standing policy that had kept the library from acquiring manuscripts in large numbers. He did this not only by encouraging the purchase of texts in the Renaissance, but also, and more important, by literally inventing two new fields at the library: the history of the Chicago Renaissance, whose anchor is now the 70,000-piece collection on Sherwood Anderson; and the history of business, in which field Pargellis was a founding father. He persuaded two great railroads, the Illinois Central and the Chicago, Burlington & Quincy to place their early records on deposit for use by scholars. Third, he perceived that the library's often unknown resources had to be brought to the attention of scholars worldwide. To do this he created the *Newberry Library Bulletin,* a modest fellowship program, and a series of brilliantly conceived and executed conferences, all focusing on the library's great collections.

By the end of his career at the Newberry (he became librarian emeritus in 1962), the distinction between college, university, and public libraries, on the one hand, and privately endowed research libraries, on the other, could be clearly perceived. The former, serving a resident population, had their collections shaped largely by the demands and needs of their readers. But in the case of the independent research library, its collections determined its readership, which was not only local, but also regional, national, and even international in scope.

Beginning in 1964 the library capitalized on what Pargellis had achieved by the time of his retirement. That is to say, it adopted as policy the desirability of helping scholars, wherever they may be, to use the Newberry if they need the Newberry.

It achieves this goal not only in the traditional manner of correspondence, microfilm, and photocopying, and by encouraging the publication of its primary resources, but also by bringing scholars to the library.

By 1964, the library was already spending more than its endowment income provided, so that it had to raise the monies elsewhere to expand its research and education programs, from a base of $20,000 per annum (1964), to $800,000 per annum (1975). In rapid succession it developed a series of educational, research, and publications programs. Some of them are funded by grants, such as the Program in the Humanities of the Associated Colleges of the Midwest (in 1975 expanded to include the Great Lakes Colleges Association); the Center for the History of the American Indian; and the Atlas of Early American History Project. Some are funded by new endowments, such as the Hermon Dunlap Smith Center for the History of Cartography; the Andrew Mellon Fund for Research and Education; and the Kenneth Nebenzahl, Jr., Lectures in the History of Cartography. And some are funded by annual gifts from the newly created Newberry Library Associates (1965), including fellowships and such publication projects as the Northwestern–Newberry *Writings of Herman Melville* project; the publications of the Society for the History of Discoveries; and the publications of the Renaissance English Text Society.

The library has always had a close, symbiotic relationship with its small board of trustees. Formerly elected for life, self-perpetuating, they have taken a strong interest in the library's activities since its founding. Officers, though elected annually, have tended to serve for life, as may be seen from the list of presidents of the board, the first five of whom died in office. They are: Eliphalet W. Blatchford, 1887–1914; Edward L. Ryerson, 1914–1928; Horace S. Oakley, 1928–29; Alfred E. Hamill, 1930–1953; Everett D. Graff, 1953–1964; Hermon Dunlap Smith, 1964–1975 (retired from office); and Edward F. Blettner, 1975–.

This interest in the library was often stimulated by the fact that there have always been book men on the board, some of them scholars in the first instance, others businessmen who were book collectors. Among the former may be mentioned Andrew C. McLaughlin, Ferdinand Scheville, Bernadotte E. Schmidt, Walter Nitze, Sir Walter Craigie, Carl H. Kraeling, George B. Young, Ray Allen Billington, Jean H. Hagstrum, and Eric W. Cochrane. Collectors include—in addition to Ayer, Greenlee, and Graff—Alfred E. Hamill, Louis H. Silver, Samuel R. Rosenthal, Herbert R. Strauss, George A. Poole, Rudy L. Ruggles, Hermon Dunlap Smith, and Suzette Morton Davidson, to mention only the more prominent. Also important was early Trustee Alexander McClurg, publisher and bookseller through whom Poole ordered many many books.

An amendment in 1973 to the enabling legislation of 1892 allows the trustees to enlarge their numbers from 13 up to a maximum of 25. Subsequent revisions in the bylaws changed the term of trustees from life to 5 years, renewable, set 75 years as the retirement age, changed the titles of officers from president and vice presidents to chairman of the board and vice chairmen (necessitating a change in the designated title of the director and librarian to president and librarian), all

recognizing the evolution, culminating under President Hermon Dunlap Smith, of placing administrative responsibility on the professional staff, reserving to the board the role of policy making.

One major area of policy making concerns the institution's finances. The original endowment by Walter Loomis Newberry paid not only for the construction of the building and the early purchases of books, but continues to provide approximately 75–80% of the current endowment income. At approximately $18,000,000 (1975), the total endowment now includes some 26 additional funds, some designated for books, some for research and education, some for general purposes. Until 1964 the library had lived well within its endowment income and had little occasion to raise money annually, its total annual gifts amounting to something over $3,000 in 1962, for example. However, with the purchase of the Louis H. Silver Collection, with the drive to upgrade and professionalize its staff, and with the development of research and education programs, the trustees now had to play a much larger and more active role in the library's finances than had hitherto been the case. In 1964–65, the first fund drive in the library's history resulted in gifts totaling $1,500,000. In 1965 the Newberry Library Associates (a friends group) was created, that now gives on the average of $50,000 a year. Other gifts, grants, and bequests have raised the annual level of gift giving to some $500,000 a year, and in some years to over a million dollars. The total annual budget of the library is over $2,000,000 (1975).

Other policy decisions include the momentous one of electing to continue as a privately endowed independent research library, in the present location, a decision made in 1959–1962. During those years, the library invested more than a million dollars in renovating the building, and in establishing air conditioning and fire proofing to protect its collections. Because it is a research library with major irreplaceable collections, the trustees also adopted a policy of supporting the developing field of book conservation, both in practice and in research, so that the Newberry has become an important center in this much-needed effort, under the guidance of Paul N. Banks, conservator.

Bibliographic access to the Newberry's collections is best gained through consultation of its general and special card catalogs. However, various published checklists and catalogs are available in university and research libraries throughout the world. These include G. K. Hall catalogs of the Ayer, Greenlee, and Wing collections, and their *Genealogical Index* to the Newberry's local and family history materials; a checklist of the Graff collection, and more-specialized checklists on such subjects as Indian Captivity Narratives, courtesy books, French political pamphlets, pamphlets of the American Revolution, Indian linguistics, manuscripts of the Ayer collection, Portuguese history and literature, printed materials relating to the Philippine Islands, and many others.

Newberry holdings are also indicated in various major "universal" bibliographies and checklists, such as the Pollard and Redgrave and the Wing short-title catalogs, Goff, Howes, RISM, Wright, Wolfe, De Ricci–Bond, and Hamer. Further, since 1944 the irregularly issued *Newberry Library Bulletin* and, since 1973, *A Newberry*

Newsletter have carried articles and notices, respectively, of more important collections and acquisitions. In the nature of things, these are all out of date, but they nonetheless indicate the scope and depth of the various areas of collecting at the library.

The Newberry Library is located at 60 West Walton Street, Chicago, Illinois 60610. Its telephone number is (312) 943-9090. The Special Collections and the Local and Family History Reading Rooms are open from 9:00 A.M. to 6:00 P.M., Monday through Saturday, and the Main Reading Room is also open Tuesday and Thursday evenings until 10:00 (1975).

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There is no book-length history of the Newberry Library. There are brief sketches to be found in Lawrence W. Towner, *An Uncommon Collection of Uncommon Collections: The Newberry Library* (Chicago, second edition, 1976). Earlier accounts, with excellent descriptions of the library's holdings as of their dates of publication are: *Handbook of the Newberry Library* (Chicago, 1933; revised edition, Chicago, 1938).

Newberry history may be traced through the published *Annual Reports* to 1938 and the unpublished, but cataloged "Annual Reports to the Trustees" (1962-). Aspects of Newberry Library history run throughout the *Newberry Library Bulletin* (Chicago, 1944-) and *A Newberry Newsletter* (Chicago, 1973-).

A good biography of the first librarian is William L. Williamson, *William Frederick Poole and the Modern Library Movement* (New York, 1963); but for a briefer study, see the *Dictionary of American Biography*, s.v. William Frederick Poole. Articles on Walter Loomis Newberry and Edward E. Ayer are also to be found in the *D.A.B.* For Stanley Pargellis, see Ray Allen Billington's "Stanley Pargellis," in Heinz Bluhm, editor, *Essays in History and Literature Presented by the Fellows of Newberry Library to Stanley Pargellis* (Chicago, 1965), pp. 3-18.

Recent articles on aspects of Newberry history include: Lawrence W. Towner, "Every Silver Lining Has a Cloud," in Mumby and Towner, *The Flow of Books and Manuscripts* (Los Angeles, 1969); "The Library and the Collector: The Newberry Library," *Louisiana State Library Lectures*, Nos. 9-16 (Baton Rouge, 1971), pp. 14-23; and "The Newberry Library: A Research Opportunity in Library History," *The Journal of Library History:* Library History Seminar No. 3. *Proceedings* (1968), pp. 1-16. A recent, interesting, and provocative interpretation of the library's early years and the principles which underlay its founding is Paul Finkelman, "Class and Culture in Late Nineteenth-Century Chicago: The Founding of The Newberry Library," *American Studies*, 16 (Spring 1975), pp. 5-22.

LAWRENCE W. TOWNER

NEWCASTLE. UNIVERSITY OF NEWCASTLE UPON TYNE LIBRARY

History

In 1871 when the Durham College of Physical Science was established in New-castle upon Tyne, little thought was given to the provision of the library and for many years one black, glazed bookcase, which is still preserved in the present library, contained the college's entire collection of books. Indeed one professor recalled the time when the entire Faculty of Arts was represented by one volume. In 1888 when the college moved to the Armstrong Building on the present campus of the University of Newcastle upon Tyne, the library was housed in the Principal's Room. The first librarian to be appointed by the college was Miss Mary Jamieson on October 3, 1894. Her duties included the making of lantern slides—an early indication of the close connection which has always existed between the library and photography, or what are now known as visual aids, nonbook, or new media materials. The following year the library moved to a larger room in the Armstrong Building where it remained until 1906, when it migrated to the first floor of the newly completed main block of the Armstrong Building—its home for the next 20 years. The first Librarian, Miss Jamieson, died at the end of 1913 and was succeeded by Miss Sharp, who held the post until her resignation in 1920.

During the years of the First World War, the college building became the first Northern General Hospital, and all the library books were transferred to New-castle upon Tyne Public Library for the duration of the war. Frederick Bradshaw, M.A,. D.Sc., who had been a lecturer in modern history since 1904, was ap-pointed to be third librarian and occupied the post for 15 years, a period of great importance in the history of the library. For many years the librarian had been responsible for the management of the library to two curators, Professor J. Wight Duff and Professor P. Phillips Bedson, but on the retirement of the latter in 1921 no new appointment was made and Professor Wight Duff remained sole curator. In 1924 he became chairman of the newly constituted Library Standing Committee and he continued to hold that office until his retirement in 1933. During those years the need for increased library accommodation became urgent and a separate library building at the west end of the University Quadrangle was eventually secured and opened by Sir Frederick Kenyon, director and principal librarian of the British Museum, on March 6, 1926. The building, designed by A. Dunbar Smith, F.R.I.B.A., consisted essentially of a Reading Room and a Stack Room, designed, respectively, to accommodate 200 readers and 200,000 volumes. In 1921 the library contained some 45,000 volumes and the annual expenditure under all heads including salaries and wages was approximately £2,000. In 1926 these figures were 57,000 and £4,500, respectively, and it is worth bearing in mind that between the years 1910 and 1921 the corporation of the City of Newcastle upon Tyne financed the library.

Shortly after the opening of this library, two important collections were transferred to it, namely the libraries of the Durham College of Medicine, founded in 1834, and of the Royal Victoria Infirmary, which had been founded in 1819. These collections were brought together and cared for by Professor Emeritus F. C. Pybus, F.R.C.S. (1883–1975). Dr. Bradshaw died in December 1945 and he was succeeded by Mr. B. S. Page. The need for further library expansion had become pressing. The outbreak of World War II postponed developments but in 1943 the Library Committee prepared proposals for postwar expansion of the library and, following the end of the war, consideration of the library's needs was renewed. In 1947 Mr. Page resigned to take up the appointment of librarian to the University of Leeds and Keeper of the Brotherton Collection. It fell to his successor Mr. R. Ogilvie Mac-Kenna, M.A., A.L.A., to work out in cooperation with the architects Messrs. Easton and Robertson the preliminary plans for a large extension to the library which would provide greatly increased seating accommodation, book storage, and space for the administrative departments of the library. One extension to the original library was completed in 1949 when two floors were added to the Stack Room but these were quickly filled. In 1951 Mr. MacKenna was appointed librarian to Glasgow University and Keeper of the Hunterian Collection and he was succeeded by William S. Mitchell, M.A., Ph.D.

Owing to the extensive program of postwar development in universities, it was not until 1957 that the necessary grants were forthcoming to enable work on the major extension to the University Library to begin. By that time the situation had become critical and over 40,000 less-used books had been accommodated in two stores some distance from the library. The major extension to the library was eventually completed in 1960, providing accommodation for 560 readers and shelf space for nearly 270,000 volumes. It was built around three sides of the original book stack leaving light wells to the old building on the east and west. It comprised a main central building on six floors, together with an east wing of six floors and a west wing of five floors and a three-story semicircular block projecting from the north side of the main building. The total floor area of the extension is approximately 60,000 square feet. The extension was opened on September 28, 1960, by Sir Frank Francis, K.C.B., director and principal librarian of the British Museum.

In 1963 the University of Newcastle was established quite separately from the University of Durham as a university in its own right. Toward the end of the 1960s it was recognized that even the extended library building would not be sufficient to contain foreseeable acquisitions for the next decade. Unfortunately space originally allocated for library expansion had been devoted to other university activities, and in 1971 Dr. B. J. Enright was appointed as librarian designate to investigate ways in which the library should develop. A large, clear site of 20,000 square meters had been made available for a new library development in the university building plan and it was decided to aim at establishing a completely new unitary library on that new site. Meanwhile a separate library store was constructed by the university on low-cost land outside the city to house less-used material pending the completion of a new library building. In 1974 Dr. W. S. Mitchell

retired following a year's study leave engaged on research into the University Library's bindings. He was appointed librarian emeritus, and was succeeded by Dr. B. J. Enright.

Special Collections and Bequests

Among the special collections and bequests held by the University Library the following are the most noteworthy and are described in the latest edition of *Special Collections in the University of Newcastle upon Tyne Library* by Alistair Elliot.

The Bainbrigg Library. This is the historical portion of the Library of Appleby Grammar School, so named from its 17th-century founder, Richard Bainbrigg or Bainbridge, which the governors of the school agreed to deposit on indefinite loan in 1966. The library of 1.200 volumes, which is exceptionally well documented, is mainly of classical and later literature and history, and is noteworthy for a number of early 16th-century English bindings.

The Gertrude Bell Collection. Consisting of 2,000 volumes, this is the working library of Miss Gertrude Bell (1868–1926), archaeologist, Oriental scholar, administrator, and political advisor, which was presented by her sister, Lady Richmond, in 1926. It contains her books on the Arabic and Persian languages, and on the history and antiquities of Arabia, Iraq, and the Near East. There are also many thousands of photographs, chiefly of Near Eastern antiquities, taken by Miss Bell. In 1926 Lady Richmond generously presented Miss Bell's letters to members of her family, her diaries, and other papers, many of which have not been published.

The Burman Collection. Deposited by Alnwick Urban District Council, to which it had been bequeathed, this collection, made by the late Dr. C. Clark Burman, is of books, chapbooks, and other material printed in Alnwick, mainly in the 18th and 19th centuries. A catalog of it has been prepared by Professor P. C. G. Isaac.

The Heslop Collection of Dictionaries. This collection of 250 volumes of dictionaries was bequeathed by R. Oliver Heslop, philologist and antiquary, in 1916. It contains such works as Baret's *Alvearie*, 1580; Florio's *World of wordes*, 1598 and 1611; Minsheu's *Ductor in linguas*, 1625 and 1627; the works of such lexicographers as Bullokar, Coles, Holyoake, and Johnson; and an almost complete set of the publications of the English Dialect Society.

Heversham Collection. The Library of Heversham Grammar School in Westmorland, which was transferred to the University Library in 1964 in return for a token sum of money, was founded in 1767 by a gift of books from the Associates of Dr. Bray, a society founded to continue the work of Dr. Thomas Bray (1665–1730) in establishing parochial libraries, which eventually became the Society for Propagating Christian Knowledge. The Grammar School Library was intended for the use of the neighboring clergy as well as for the masters and pupils of the school,

and books were also given by local gentry and former pupils. Two MSS catalogs compiled about 1800 show that the library then consisted of 600 volumes, of which about 450 survive. The collection consists mainly of editions of classical or theological authors and, in spite of its comparatively late foundation, approximately half of the volumes were printed before 1700 and a few before 1600.

Merz Collection. This is kept in the Merz Room, which is entered from the Gallery of the Arts Reading Room. The donor, John Theodore Merz, an electrical engineer with a taste for philosophy, presented his mathematical library to Armstrong College in 1909 and 10 years later added the collection of books which he had built up when writing his *History of European Thought in the Nineteenth Century.* The collection, which numbers 4,000 volumes, is strongest in the two fields mentioned, but also contains notable works on science, European history, and German literature. The owner evidently was in the habit of having his books bound by Zaehnsdorf of London—at least up to 1914—and the collection is noteworthy for its fine leather or half-leather bindings as well as for the books themselves.

The Pybus Collection. The library of books, engravings, prints, portraits, and busts illustrating the history of medicine, collected by Emeritus Professor F. C. Pybus, D.C.L., F.R.C.S., during 40 years, was handed over by him on September 15, 1965. It comprises 2,000 volumes, 2,000 engravings, 50 portraits and busts, and a large number of holograph letters. The books are classics of the history of medicine, with particular reference to the history of anatomy, of surgery, and of medical illustration; and the engravings, oil paintings, and busts are of medical men from the 16th to the 20th century.

Runciman Papers. The political papers of Walter Runciman, 1st Viscount Runciman of Doxford, 1870–1949, were deposited here in 1969. They cover Lord Runciman's career as Liberal M.P. and cabinet minister (Board of Education, 1908–1911; Board of Trade, 1914–1916 and 1931–1937) and his mission to Czechoslovakia in 1938.

The St. Bees School Library. The historical portion of the Library of St. Bees School, Cumberland, was transferred to the library in 1965 for a nominal sum. The school was founded by Queen Elizabeth I in 1583 and the library was built up during the 17th century by donations from the local gentry and clergy, being described by Daniel Defoe as "very valuable and still increasing." The collection totals 405 volumes, mainly of theology and classical literature, of which 102 date from the 16th century; there is one incunable and one medieval manuscript. There are a number of English blind-stamped bindings of the 16th century.

Trevelyan Papers. The family papers of the Trevelyans of Wallington, Northumberland, were deposited here on indefinite loan in 1967. They contain much unpublished material by and about Ruskin and the Pre-Raphaelites, and much political material of this and the last century. (Two members of the family have been cabinet ministers and two have been appointed to the Order of Merit.)

Robert White Collection. This is a most interesting collection, since it is a personal library which was built up, distributed, and recollected. Robert White was

born in Roxburghshire in 1802 and moved in 1825 to Newcastle where he was employed as a clerk. He was interested in local history and antiquities and in English literature, particularly in ballads, his knowledge of these making him a valuable contributor of information to F. J. Child during the preparation of the latter's great work. He built up a large library which, on his death unmarried in 1874, passed to sisters and thence to their families. Sixty-eight years after his death his books were reassembled by his great-nephew, Professor Sir George White Pickering, and his great-nieces Miss Mary White Pickering and Miss Amy Potts, and presented to King's College Library. The collection, which numbers 4,400 volumes, is especially rich in English literature (particularly ballads and chapbooks), ecclesiastical history, and the history and topography of Northumberland and the Border country.

FRIENDS OF THE UNIVERSITY LIBRARY

In 1955 a society was founded with the title of Friends of King's College Library (now the Friends of the University Library, Newcastle upon Tyne), of which the Patron is His Grace the Duke of Northumberland, K.G., with the aims of building up a fund for the purchase of rare books and manuscripts for which the library's ordinary income is insufficient, to act as a channel for gifts to the library, and to bring together persons, whether connected with King's College or not, who are interested in the library and its work. Gifts from the Friends so far include works in fields in which the library has a special interest, such as early dictionaries and herbals, the Urs Graf facsimile of the Lindisfarne Gospels, and the first edition (1545) of Ryff's Frawen Rosengarten. Lectures on such topics as medical illustration, editing Dickens, the printer William Bulmer, the history of anaesthesia, and the bookbinders of Northumberland and Durham have been given at the Annual General Meetings; and parties of the Friends have visited various academic and private libraries, including those at Alnwick Castle, Durham Cathedral, and Ushaw College.

Recent Work and Future Trends

A useful survey of recent activities and achievements by those working in the University Library was published in *The Art of the Librarian*, a collection of original papers from the Library of the University of Newcastle upon Tyne, edited by Alan Jeffreys (Oriel Press, 1973), a *festschrift* composed of contributions from present and past members of the University Library staff presented to Joan Gladstone on the occasion of her retirement after 26 years work in the library.

The library has taken a prominent role in library automation research and development in cooperation with the University Computing Laboratory. One of the most ambitious projects concerned the conversion of the existing card catalog

of library holdings into machine-readable form. The project is described in the following note by Alan Jeffreys:

> In 1967 the University of NUT received a grant from OSTI (as it then was) in partial support of a research project to study the problems of converting the Name Catalog (on 5 x 3 in. cards) of the University Library into machine-readable form and to carry out studies in catalog use. The project was conducted jointly by the University Library and the University Computing Laboratory. A report on the first part of the project has been published (*1*) and an unpublished report on the second part, a "Catalogue Use Study" by W. E. M. Morris, is available on loan from the Lending Division of the British Library.
>
> At the conclusion of the OSTI-supported project in 1970, the Name Catalog, comprising some 300,000 catalog records, had been converted onto magnetic tape, using the university's computer, an ICL KDF 9, later replaced by an IBM 360/67.
>
> The Name Catalog was started in the 1890s and, over the years, had undergone a number of changes in cataloging style, both in data content and format. In particular it was recognized that this catalog contained many inconsistencies.
>
> The philosophy of the project was to see if an acceptable upgrading of the catalog could be achieved with the help of computer techniques with a minimum of editing. Entries were keypunched onto paper tape and then converted to magnetic tape without any pre-editing. Subsequent editing was partly manual and partly automatic: the former including the correction of typographical errors and errors in the record structure, the latter the standardization of variant headings and the division of certain fields into standardized subfields (e.g., imprint into place, publisher and date).
>
> The record structure was designed to keep the data as compact as possible and to optimize the features of the KDF 9 while remaining compatible with the MARC format.
>
> Although the project successfully converted the catalog into a machine-readable form it showed that the automatic upgrading of records by machine cannot always replace manual editing. For example, the computer cannot be used to expand non-standard abbreviations to their full standard form.
>
> Some of the problems raised by the project have since been pursued elsewhere (e.g., storing and sorting large files of bibliographical data, and the mechanization of library filing rules). At Newcastle, data from the full records of the project have been used in building up a much shorter stock record. This is an on-going system used in the library's automated loan system as well as a stock list and back-up to the catalog records (*2*).

1. A. E. Jeffreys, *The Conversion of the Catalogue into Machine Readable Form*, Oriel Press, Newcastle upon Tyne, 1972. ISBN 0 85362 145 4.
2. Anne D. Robins and A. E. Jeffreys, "Newcastle upon Tyne University Library Sock Record System: Plans and Progress," *Program*, 7(4), 249–254 (October 1973).

A computerized order system was introduced in 1966 and a description of the system together with its development until 1972 has been written by Mr. R. W. Fern and appears in *The Art of the Librarian* (pp. 72–93). The application of computer techniques to the handling of special collections records is described by

Alistair Elliot in the same work (pp. 115–132) and a further paper by him has recently been completed entitled *Computer Typesetting Two Antiquarian Bibliographies: A Worm's Eye View of the Applepie Project*. In it he describes how two collections of old books in Newcastle University Library, Appleby Grammar School library (1,200 works), and the Pybus historical medical collection (2,320 works) were given full bibliographical cataloging, and how the entries have been computer processed to produce indexes and output on magnetic tape for direct computer typesetting. The processing and its problems are historically described in a nontechnical manner with informal conclusions on the difficulties of such projects.

The prominent role undertaken by the University Library in conjunction with the Computing Laboratory has been described by A. S. Barber and J. S. Emmerson in *The Art of the Librarian* (pp. 94–114) and a further research grant from the British Library Research and Development Department was received by the University Library to participate in a major research project aimed at evaluating on-line mechanized information service retrieval networks including MEDLARS and MEDLINE.

In 1973 a research grant was also received from the British Library Research and Development Department to enable the Librarian Designate's team to undertake a feasibility study into the problems of stock control in academic libraries. The project arose from the practical difficulties which the University Library was experiencing in continuing to accommodate its expanding stock, while the experience which the library had gained in computer-processed records was felt to be relevant in investigating the question of the very costly procedures which the altering of records relating to relegated materials involved.

The University Library has throughout its history taken an influential part in national and international library activities. Many of its past staff now hold senior posts in national and academic libraries both in the United Kingdom and abroad. More recently striking progress has been made in library cooperation within the Newcastle upon Tyne area in conjunction with the Newcastle upon Tyne Public Library and the libraries of the Polytechnic and the Literary and Philosophical Society. Specialized working groups have been established as a result of this cooperation policy to investigate ways of providing improved services, especially during times when resources for library provision in all sectors is unlikely to meet expectations. The most notable progress has been accomplished by one working group NEMROC (Newcastle Media Resources Organising Committee) which represents a wide range of library and educational technological interests. Special arrangements have been made by the University Library to facilitate the interchange of interlibrary loans, gifts, and theses from the Newcastle and Durham area to the British Library Lending Division at Boston Spa. It is hoped in the future to develop these links in relation to the basic problem of stock control which confronts academic libraries in the United Kingdom and to ensure that the local user receives the best possible range of services from the outlay of resources which are available.

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<div align="right">B. J. ENRIGHT</div>

NEWS LIBRARIES AND COLLECTIONS

The role of the news library is to provide a rapid topical reference service, mainly for journalists and feature writers. Large news libraries provide support not only to editorial departments of newspapers and magazines but also to news broadcasting and program staff of radio and television networks. Their task is to select, classify, and make available a portion of the huge output of information—the written, printed, and spoken word—which is processed and distributed daily, and indeed hourly, by the mass media of communication. With the increasing immediacy of news in the modern environment and the growing complexity of current affairs, the library of news, with its emphasis on recent issues and topics not dealt with by other sources, provides a unique service.

News libraries are usually expected to provide both specific and comprehensive retrieval of any aspect of news or features published or broadcast by the parent organization plus a catholic selection from other sources. Their field is current affairs; the range is as wide as the news of the day: sport, crime, personalities, and

nine-day wonders given equal prominence with foreign affairs, politics, economics, and social questions. Selection reflects demand and is a matter of local policy, usually confined to editorial items; advertisements are seldom required.

The library departments of the news media tend to be used also as custodians of the archives, preserving full sets of newspapers, scripts, and other items for posterity and record as well as for daily use. Thus their stock on many topics is a primary source for history as it occurs, recording events and debates through the eyes of contemporaries. The library relies for its information, perhaps too heavily, on press cuttings, on news and script indexes, pamphlets, press agency messages, and, in a support role, reference books.

Regrettably, many news systems have reflected the slow growth of technical advance evidenced by newspapers themselves. It now seems possible, however, under the twin influences of mechanized information techniques on the one hand and financial stringency calling for optimum use of space and staff on the other, that the conventional news library may move to the forefront of current information processing. Progress is somewhat hampered by the intractable shapes of news and by the volatile nature of its subject matter. Although the way ahead is as yet far from clear, technology grows ever more inventive, and recent advances offer the likelihood of effective mechanized intervention in the next few years.

The distinguishing features of the news library create their own opportunities and difficulties. Prominent among them is response time, where for the greater number of inquiries an answer is necessary at once or within a very few minutes. An edition of a newspaper, a program going on the air, has a deadline that cannot wait, and information late is work wasted. The counterpart of this situation is the high obsolescence ratio, where a large proportion of the demand relates to recent material, within a year or less.

Although the overwhelming pattern is thus of quick reference to recent events, there remains a strong although statistically less frequent demand for older material sometimes required less urgently. Generally speaking, news libraries have failed to take advantage of this bias in demand and endeavor to keep all their stocks on more or less equal availability. The requirement for the very latest information also has an effect on processing where the objective is to have today's intake classified and available for consultation before morning brings a new set of papers.

While these factors have a direct effect on organization, the nature and volume of its stock also set the news library apart. In the larger systems press cuttings are created at the rate of 1,500 to 2,000 or more daily, selected, classified, cut, and filed rapidly on a production line basis. Several copies of each newspaper are "marked," that is, each news story is captioned and classified as the first task of the day. These items are then cut out, stamped with date and source, mounted sometimes, and filed. Folded cuttings occupy around 1,000 to the linear foot depending on size, so the space demands of a busy news collection are substantial.

Press cuttings are highly variable in shape and size, especially those from popular and tabloid newspapers where attractive presentation is as important as content. Good storage principles involve the imposition of a matrix on the variables and

reducing all items to a standard storage size, both for economy and convenience of consultation. The diverse approach to unit filing size in different collections— foolscap, quarto, A4, A5, 6 x 4 in. and other alternatives; filing vertical or horizontal, in folders or envelopes, or no distinct containers at all; mounting or not mounting —all are signs of the problem caused to tidy-minded librarians by the eccentrically shaped forms of current information. The essence of the difficulty lies in a conflict of interest. The library wishes to store small in order to make the best use of space; the user, particularly in a rapid reference environment, ideally requires cuttings presented open and flat so that they can be read like the pages of a book, preferably with the latest items first.

A neat solution to the problem is to prepare cuttings mounted on standard-sized sheets, folded to fit and clipped together at the short edge to form a sheaf, then stapled or bound between manila covers. The sheaves may be stored on open shelves, spines appropriately labeled, like books. More commonly, loose filing in folders or pockets, with only the smaller items mounted, is a practical, economic, though less tidy and secure system.

The vertical filing cabinet of various dimensions is the most favored storage unit; its extensive rows and files giving the larger news libraries the appearance of the mammoth filing systems they really are. Alternatives such as lateral filing racks or card or steel pamphlet boxes are also widely to be found. The filing cabinet provides for rapid filing and consultation while the pamphlet box, light and easily transported, offers organizational flexibility in the use of space.

Power-driven filing units bringing trays to the operator at a push-button console greatly reduce manual effort and in some cases permit retrieval from remotely located stores. Labor saving as they are in an ideal location, mechanical systems delivering to a single point can service only one inquiry at a time, and the floor loading can be formidable.

Systems with a high intake and rapid semiobsolescence are good candidates for archival storage on microfilm. Until recently, however, the wide variations in size of cuttings, the uneven quality of newspaper printing, and, perhaps, the conservatism of writing staff has inhibited progress in this direction. The work of transferring press cuttings to microfilm spools or fiche is highly labor-intensive and the results can be disappointing without careful quality control. There is uncertainty also over the long-term economics of preserving on film material which from the editorial viewpoint is of transitory nature. Nevertheless, a growing number of news organizations are turning to microfilm preservation rather than destruction. In addition to space economies, the existence of press cuttings on microfilm permits easy duplication, use by different inquirers at the same time, and better security. Where the same press items are held in a number of libraries in similar classifications, as is the case in capital cities, independent microfilming is wasteful, but few cooperative schemes are to be seen as yet.

Press cuttings are a borderline case for 16-mm format and good schemes are in operation using either 16-mm or 35-mm frames. The BBC in London, for instance, films press cuttings with a flat-bed 35-mm camera creating standard

dimension fiche bearing 18 frames each, closely packed. This format is presently being used with success in microfilming a collection of 20 million heavily used cuttings in London. *The New York Times* and the *Wall Street Journal* use 16-mm fiche for cuttings, filming from a smaller original paste-up. Both fiche and spool film have a role to play. The former is attractive for its easy update facility, although it is more costly to produce; spool film is appropriate for large, static files and offers greater convenience for browsing, particularly with motorized drive.

The value of microfilm as a space-saving device for bound newspaper volumes is now commonplace and 35-mm spool film is the general format. An indication of the growth of microfilm in this respect is to be found in the Library of Congress publication *Newspapers in Microform,* which records no less than 34,000 United States titles alone stored on microfilm in 1973.

For active news systems, sequential microfilm stores consulted in combination with an index are sometimes used in attempts to dispense with laborious cutting and filing routines. Complete pages may be filmed in chronological order, calling up chosen items with the aid of the index. Success depends upon quality of indexing and easy access to the microfilm image. Large data stores call for the frequent changing of magazines and the browsing facility is hampered by the chronological arrangement of the material. Experiments have been made with numerous forms of microfilm store and automated retrieval, principally microfiche in carrousels or spool film in cartridges. Both demand 16-mm format at present. Coded film systems appear to offer good prospects but all must be regarded as unproven in a major news retrieval environment. As the cost of staff and space increases, however, and microfilm and information technology becomes more sure of itself, we may expect to see more widespread developments.

For a long period news indexes have formed a parallel reference source with press cuttings, although the bias of use favors cuttings for most purposes. Where specific reference is required—letters, leading articles, features, company news— the index is an effective tool. It is less convenient for scanning a quantity of related items stored randomly, such as personal name references. With such experiments as those described above, however, indexing in automated mode may take priority for news systems.

For internal purposes, traditional indexes under broad headings on cards with comprehensive abstracts are adequate. Fewer topic headings allow more rapid access for those familiar with the arrangement, both by the indexer and inquirer. Where publication is contemplated, however, specific direct entry is necessary, involving preparation on slips or proformas. There is a correlation between specificity of heading with brief entry and broader headings requiring fuller descriptive notes.

A small number of published indexes exist, led by *The New York Times Index* (fortnightly) and the (London) *Times Index* incorporating the *Sunday Times* and *Times* supplements (quarterly). Index publishing is an expensive operation with a small market, and only a few find it viable. Certain cooperative projects for the retrospective indexing of older newspapers are under way.

The technique of printing an index with computer assistance is now well proven. The problem for the production of internal news indexes, however, in addition to nomenclature and the fluid nature of the subject matter (discussed below) is to devise a cost-effective approach. Automatic indexing and free-text searching are attractive because they need no indexers. Other systems require a degree of human intervention where the cost and effectiveness of human indexers competes with the machine. In the field of free-text searching one project should be mentioned—the work originally undertaken under the auspices of Project Intrex at MIT in association with the American Newspaper Publishers Association, using text generated at the *Worcester (Mass.) Telegram*. The approach assumes that the main theme and content of a news story is stated in the opening paragraph and developed in succeeding ones. Thus all words except conjunctions and articles in the first paragraph of every news story are coded, plus each word beginning with a capital letter in later ones. Such a system is under investigation by a number of newspapers, and more elaborate programs using free language or controlled keywords are available in this context.

Professional discussion continues over the merits for current affairs of the free-mode approach compared to a structured input based on a thesaurus. It may be that the relatively short-term life of the former—since it can only be used for the duration of its economic storage on-line—is less of a disadvantage in the highly obsolescent news environment. The increasing use of computer control for news distribution and typesetting must also influence the course of future development.

Several of the approaches already referred to are in practical use at *The New York Times* Information Bank, a courageous and imaginative venture providing an automated news retrieval system for the paper's news staff and for external subscribers. *The New York Times* prepares abstracts of hundreds of news stories and articles daily from some 30 publications including *The New York Times*, entering them into a computer store and coding them for retrieval via visual display units and keyboards using natural language requests. In addition, cuttings from *The New York Times* are transferred to microfiche where they can be viewed in the newspaper department or dispatched to inquirers. From the news standpoint, nothing remotely as comprehensive exists on-line elsewhere.

The scheme proves the efficiency of a thesaurus-based arrangement for news under computer control and records a high retrieval ratio. The availability of the same data for consultation by staff and outside users exploits the value of current information as a research tool and justifies a relatively high subscription. A successful means of automatic call-up of microfiche has so far eluded the scheme's designers, and fiche are retrieved manually. Some of the difficulties experienced by editorial users—slower response time than manual methods, reliance on abstracts—illustrate the problems inherent in automating current news in an editorial environment.

In addition to fast, accurate response, with minimum irrelevancies, the question of presentation to the editorial user is of primary consequence. The journalist expects more than the text of a previously published news item, he demands it in its

original or in replica form showing its layout. As press cuttings libraries grow ever larger, the time has long since passed when the instant availability of all material close to the service point is practical. Further, the transmission of material to users in the field or to service points distant from the main store is increasingly desired. If this demand is to be met, a practicable device is required to bring images from a remote store to the point where the user needs them. In other words, facsimile transmission, but of a better speed and quality than the relatively slow transmission time via normal lines, which has until now restricted its widespread use in the news library environment. Digital techniques and bandwidth compression offer the promise of sending relatively large quantities of material from store to user point and thus substantially reduce the duplication of effort and storage currently inherent in many systems. For local operating in adjacent premises, closed circuit television transmission of hard copy and film can be faster and more reliable than messengers. In this connection, autoscanning of high capacity ultrafiche and video buffering show signs of promise.

However ingenious the mechanics of the operation, the ultimate key to fast, accurate response lies in the arrangement of the material in the store—in other words, classification. The subject is equally important and presents similar difficulties whether the collection is in the form of press cuttings arranged in filing cabinets or a microfilm bank under automatic control. It is an interesting fact that while much current research is based on a chronological file exploited by an index through postcoordination of terms, most of the schemes in current use employ a large element of precoordination. The conventional news library relies upon full classification of material at the input stage and stores all its stock in classified order. Upon the quality of its classification the success of the news library entirely depends.

Arrangement is normally alphabetical by subject, foreign country, place name, and personality. Outside capital cities the region or town of the library's location is often treated with priority and given a section to itself, creating unrivaled coverage of contemporary local history as it occurs. Alphabetical non-notational schemes are chosen for news for a number of reasons which do not apply to formal knowledge classification systems designed with books or science topics in mind. An intake of hundreds of items daily and consequent rapid decision making called for from the classifiers necessitates plain language mnemonic headings with minimum look-up. Further, direct alphabetical arrangement easily accommodates new topics or changing facets of existing ones with easy deletion or update.

The choice of categories and their subdivisions and grouping follows the style of news presentation and reflects demand. Responding to the attitudes of news, emphasis is placed on personality files so that appropriate news stories are classified at least once from this aspect. Place also—the location of news—can be important both as a finding key and to provide comprehensive locality coverage. Foreign news is similarly treated, with most aspects subdivided under the country of their origin.

Ranking equally with these three, and transcending them in difficulty, is the library's general or subject sequence. Because of the separation of foreign news, subjects are treated as both national and universal in concept. The approach may be specific or hierarchical, using either direct headings or main classes with appropriately scaled subdivisions. The urgency of the working situation leads most libraries toward specific headings since they give faster retrieval and apparently simple arrangement. As collections grow, however, the specific approach may break down, and the number of cross-references required can get out of hand, especially with the frequent changes required to keep up with news. Thus it is not long before an element of subject grouping is necessary. On behalf of the specific arrangement it may be said that it is easy to understand and is effective for rapid retrieval of simple concepts. On the other hand, related topics can be separated and it is a less helpful tool for research in depth. The hierarchical scheme gives a view of the scope of a heading and, provided the steps of subdivision are limited, caters for many aspects of a complex topic from a single entry point. Care has to be taken, however, to avoid excessive steps of subdivisions and some arbitrary decisions are required to fit topics within appropriate main groups. Most news libraries, it has to be admitted, are an uneasy combination of both approaches.

It is the task of the news library classifier, in addition to assessing the true subject or main place for a story, to decide what additional "angles" or subsidiary topics require coverage. Since this involves extra copies of the item, due regard should be paid to economy of space with a proper caution against undue proliferation. The decision requires a full understanding of the range of headings available and the likely future demand. Ingenious use of single news items as references in the case of continuous topics can minimize the growth of a collection while assisting its performance.

In spite of the preponderance of alphabetical schemes, there exist a number of hierarchical notational ones with a numeric or alphanumeric notation. Most of those in use at the present time are purpose-built and owe little to published schemes. Numerical schemes appear to work best in low intake or research situations with an unpressured environment, for the complexities of notation can hinder the rapid response required by a newsroom. It is notable that the Universal Decimal Classification, designed 50 years ago in part with the organization of press cuttings in mind, is little used in news situations.

No satisfactory universal thesaurus or list of subject headings for current affairs has as yet emerged, no doubt due to the nature of the subject matter which, by definition, is new and unformed. The chief comprehensive list to be published is *The New York Times Theasurus of Descriptors* based upon the entries of *The New York Times Index*. It is, of course, essential for news libraries to maintain their own schedules, one of the most comprehensive being the *BBC Schedule of Subject Headings* for its News Information Service. In addition to scope notes, an adequate network of references and tracings is required. The thesaurus, in fact, is not sufficient alone. It must be supported by detailed guidelines for the treatment

of specific cases. Much more work remains to be done on subject classification for current affairs.

In addition to news, a major part of the routine of many newspaper libraries revolves around the acquisition, storage, and organization of "pictures"—collections of photographs, transparencies, and negatives used as illustrative material. The picture collection may be an integral part of a multimedia library or be controlled as a separate department. Photographs reach newspapers and other mass media in large numbers from staff photographers and agencies for immediate use, of which a selection are retained for stock. Portraits and personality prints take precedence, plus views of cities, buildings, aircraft, ships, anything vulnerable or likely to be in the news. Picture editors like large prints and librarians prefer small ones, or at least prints of standard dimensions. Where economics permit, all prints for storage should be reprinted in one or two sizes, each with accurate captions and date, plus copyright attribution. With the large numbers involved—sometimes hundreds daily—careful mounting or detailed individual recording of each item is not possible and classification takes the form of group filing at the appropriate heading, as with press cuttings. Single portrait and location shots present few classification problems, but with subject material or personality groups extensive cross-references may be necessary. Sometimes, a face in a group photograph may be the only portrait available and will be used alone in another connection. Editors regard prints and negatives as expendable objects to be manipulated—until they are wanted again.

A conflict of classification not infrequently arises when, for example, a picture of children cycling at a fair may be treated as *Children*, as *Holidays*, as *Facial Expressions*, as *Fairs*, as *Cycling*. Conventional classifying involves the application of decision criteria such as true subject, least-represented topic in the collection, best or most unusual view, or filed for a sectional interest only. The difficulty has led to experiments in key word classifying with computer assistance. All require a degree of attention to individual prints greater than the time normally available.

Where negatives are concerned, the conventional approach is chronological filing by sequential number with a card index giving headings, date, and caption. Storage of negatives, usually of 35-mm or 2¼ x 2¼ in. format, is in envelopes or pockets in file drawers, sometimes with captions. More elaborate systems involving aperture cards, transfer to roll film, or mounting with contact prints are in use. For archival storage, roll film has benefits, provided the indexes are adequate. Contacts can be prepared rapidly and cheaply on demand. Like negatives, color transparencies need special protection in acetate pockets and the availability of a light box or other means of viewing for selection.

It is too soon to forecast the shape that news libraries will take in the future. Progress depends to an extent on the willingness of the media to invest in trial systems. The pressures on mass-selling newspapers would seem to indicate that heavy capital expenditure in this quarter is unlikely. On the other hand, if technology can promise substantial savings in staff or space we might expect new approaches to be investigated eagerly by news media anxious to reduce expenditure

on both. Whatever the future holds for news libraries we may be sure that there is a computer and microfilm in it somewhere.

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GEOFFREY WHATMORE

NICARAGUA, LIBRARIES IN

Introduction

Nicaragua is situated in the middle of Central America, between Honduras at the north and Costa Rica at the south; the west coast borders on the Pacific Ocean, the east coast on the Caribbean Sea. Largest of the Central American republics, it covers an area of 49,759 square miles, which can be conveniently divided into four regions: the heavily populated region of the Pacific Highlands in the west, the western and northern parts of the Central Highlands, the Eastern Highlands together with the Caribbean plains, and the "Miskito" settlements on the eastern coast (including the formerly English city of Bluefields).

In actual fact, the majority of the population and virtually all of the country's economic and cultural activities are located in the Pacific region, the principal cities being Managua, León, Granada, Chinandega, Masaya, and Estelí. In the eastern region Bluefields is the only urban center; it is difficult to reach overland and is more or less culturally and economically distinct from the rest of the nation.

The major seats of the country are situated along the Great Rift, a belt of continuous volcanic and seismic activity. Thus Managua, the capital since the 19th century, has been devastated by earthquakes three times during the last 100 years

(in 1885, 1931, and 1972). Volcanic activity near the city and throughout the Pacific region remains a threat.

During the colonial period, Nicaragua was ruled administratively as part of Guatemala; however, the fact that Nicaragua was geographically isolated from its neighbors led to an early independence. Regional independence was established in 1838, and Nicaragua continued as a Central American republic from 1839 to 1935. In 1936 began the Somoza administration, which has continued to the present day.

The Miskito Coast on the east has had an entirely separate historical development. It was a British colony until 1850, and numerous African slaves were imported to work the land. When Great Britain yielded its claims to the area, there remained the descendents of the slaves and various scattered tribes of the original Miskito Indians. The area soon gave its allegiance to the young republic, even though it remained remote from the life of the capital.

The population of Nicaragua is predominantly "mestizo," a mixture of European and Indian races. Current census reports estimate the population of the country at slightly below 2,000,000. Primary education is free and compulsory until the age of 13; however, the school facilities are inadequate and only about 50% of the children are able to complete this much formal education. The rate of illiteracy is approximately 40%. Secondary schools are naturally fewer than the primary schools, and they are not always well equipped to prepare those students who would go on to the universities. There are two universities: the National Autonomous University of Nicaragua, located in León with branches in Managua and Carazo; and the Central American University in Managua, a Jesuit-sponsored institution, with a branch in Estelí.

Nicaragua has strong cultural and artistic traditions, originating in the 19th century, particularly in poetry and the graphic arts. Rubén Darío, Nicaragua's poet at the turn of the century, enjoys a world renown.

Early Libraries

Library history in Nicaragua is largely a history of the 20th century. Although there is a long tradition of interest in books, particularly in collecting documents relevant to the country's history, the 18th and 19th centuries saw little in terms of book collections available to the public sector. Private collections flourished in the mid-1800s; thanks to these, important governmental, private, and archival materials have been preserved. One private collection, in 1914, listed 2,014 entries relative to the history of Nicaragua, 1628 to 1910. The *Registro oficial* (Official Government Register) began publication in 1845 and has continued as the *Gaceta oficial*. Governmental and private interests were to dominate the book and library scene until the 1920s, with the exception of the library efforts of the National Autonomous University.

The ancient University of León had its beginnings in 1680; its valuable book resources were ultimately concentrated in the Curia Eclesiastica, still one of the

most important sources of local history. In 1816 the Seminary library was founded, furnished with books donated by the various ecclesiastics involved in the teaching programs. The emphasis of the book collections and teaching was chiefly in medicine and law.

Many of these works served as the basis of the library which was established when, in August of 1816, the University of León was inaugurated as an institution independent of the Seminary. This library was considerably enriched in 1818 by a large private donation. The libraries of some early faculties (medicine in several aspects, and law) remained physically separate.

In 1950, plans were begun for centralized library services, and in 1958 the Central Library was established. Although centralized for the most part, many materials were still located in the various faculties and laboratories.

The public library movement began in 1881, with the establishment of the National Library; this was the only "public" library until 1914, when the city of Matagalpa took over a library for public service. The first real public library, in the modern sense, was organized by the Workers' Society in Managua in 1921.

Since that time, most cities and large towns in Nicaragua could boast of a library open to the public, sometimes supported by the government or, more frequently in the early days, by the private initiative of its citizens. To cite some examples: in Bluefields, a municipal library was founded by private citizens in 1929; in Chinandega, a Workers' Society library in 1930; in Jinotepe, a municipal library in 1922; in León, the relatively large public library "José Madriz" in 1921.

One of the most important and influential of the public libraries was the American Library, organized with the help of the American Library Association, which flourished in Managua in the 1940s. This was the first significant library where open stacks and a free home-lending policy were practiced. Circulation and user statistics were impressive; in one month in 1945, 20,000 persons visited the library (at that time, the population of Managua was estimated at 80,000 and illiteracy was high). The American Library had an excellent children's section, and also published several major bibliographies of Nicaraguan publications. When this library closed down in the early 1950s, its collection was given to the National Library.

As mentioned above, the National Library began functioning in 1881, with collections based on donations from private Nicaraguan libraries and from individuals and institutions abroad. A notable event in the history of the National Library was the employment of Rubén Darío, who introduced into the country and the library an interest in French culture and literature.

Modern Libraries

NATIONAL LIBRARY AND NATIONAL ARCHIVES

In 1972, the National Library was located in an old building in the market section of Managua. In spite of its unpretentious surroundings, it housed a collection of

nearly 300,000 volumes and served approximately 16,000 readers per month. The staff consisted of 18 persons, including a professional librarian and a full-time bookbinder. Its primary function was to serve as a public library for the populace of Managua.

There were a number of unique special collections. Among these, the most notable were: the principal works of Rubén Darío, many signed by the author; the original books of the National Library, bound in calf with the library seal; a special collection of Spanish authors; and a collection of French authors assembled by Darío.

Separate from the National Library was the library of the National Archives, with its priceless collection of manuscripts on colonial history as well as valuable materials from the 19th and 20th centuries. Many of the documents in the archives were donated by the Spanish government from the Archives of the Indies in Seville.

PUBLIC LIBRARIES

In Managua, in addition to the National Library, there was the Nicaraguan–American Library, with a diversified collection of books principally in English. This library had a particularly good collection for children and young adults, and was well attended.

Outside of the capital, the Ministry of Public Education has provided funds for public libraries in nine provincial capital cities; seven provincial capitals are without public libraries. In addition, seven public libraries in other cities are maintained by public funds.

The Central American Library in Managua deserves special mention. It functions as both a public and a school library, and is one of the best and most used libraries in the country. It was founded in 1939, as an international cooperative undertaking, by the Central American countries of Guatemala, El Salvador, Honduras, Costa Rica, and Nicaragua. From an initial collection of only 32 volumes, it grew to 6,800 volumes in 1957 and almost 20,000 volumes in 1972. Although the collection is based principally on donations, it is notable among others in the area for its quality and organization.

SCHOOL LIBRARIES

School libraries in Nicaragua developed rather haphazardly until 1965, when the Ministry of Public Education made special efforts to organize them within the educational system. By 1972, there were 86 primary school and 63 secondary school libraries. The quality of these libraries was, inevitably, uneven; the ministry offered special courses for school librarians, and those libraries which benefited from these courses were superior to those which did not. AID and other agencies helped to supplement the funds of the ministry, to promote libraries in the schools. Nonetheless, the school libraries remained for the most part below standard, and many schools had no libraries at all.

The best of the school libraries is the "Biblioteca Pedagógica," situated within the Ministry of Public Education and connected with the Nicaraguan Normal School. Established in 1966 with 200 volumes, this library had, in 1972, four full-time employees and served a population of approximately 1,900 users, with a collection of more than 4,000 volumes of current relevance.

UNIVERSITY LIBRARIES

In terms of organization, size, quality, and scope of the collections, the university libraries are among the best in Nicaragua. Because the two universities have comparatively generous funding as well as pressing incentives for building their collections, they have drawn superior personnel and have become the leaders in Nicaraguan library development.

The National Autonomous University of Nicaragua (UNAN), the history of which was already described, organized its Central Library in 1958 in León. There are at present three university branches, in León, Managua, and Carazo. The university library collections include 32,893 cataloged books and some 15,000 uncataloged volumes—by far the largest book-holding collection in the country. The demands upon these libraries are particularly great, with almost 8,000 registered students in the university complex; there are slightly more than four books per student, as opposed to the United States standard of 50 books per student. This library system, in 1972, had only one professional librarian, among a staff of 27 persons. The major problems are the lack of basic bibliographical tools, lack of trained personnel, and lack of funds for library equipment.

The Central American University developed two very good libraries by 1972: a Central Library with 15,000 volumes and the Historical Collection, a special library with extensive and valuable resources in the history, archeology, culture, and economy of Nicaragua and Central America, with its collection of some 10,000 volumes. The libraries were housed in a modern, air-conditioned building, with a staff of 20 persons. In addition to the bibliographical materials in the Historical Collection, there was a substantial museum of pre-Columbian ceramic and a large collection of historical manuscripts.

SPECIAL LIBRARIES

In a country of limited library resources, the excellence of some of its special libraries is especially noteworthy. Although each has developed independently, the phenomenon of special libraries in Nicaragua reflects the widespread interest of the public (especially business and the educated classes) in the access to information.

The library of the Central Bank ranks, along with the university libraries, as one of the best in the country. As of 1972 this library, located in the Central Bank building and serving its employees as well as a wide sector of the public, had a collection of over 40,000 volumes. Emphasis of the collection is on finance, economy, agriculture, and the social sciences; in addition, special efforts were made

to collect early governmental and other historical Nicaraguan materials, as well as current national publications (with the aim of eventually publishing a national bibliography). In addition to this fine collection, the Central Bank is planning to construct a new research library, the National Socio-Economic Library of Nicaragua. This last is expected to be the largest library in the country, a national information center in economics and the social sciences which will inevitably assume certain functions of a national library.

Another important special library is that of the Central American Institute of Business Administration (INCAE). INCAE is a multinational, postgraduate school of business management, connected with the Harvard Graduate School of Business Administration and funded in part by AID. This library, excellent in its field and unique in the area, contains some 10,000 volumes and currently receives over 600 periodical titles.

The National School of Agriculture and Animal Husbandry has had a library since 1929. At present, there are more than 15,000 volumes in the general book collection, 150 periodical titles, and large numbers of documents and special publications in the field of agriculture. The library is widely used, not only by the students and faculty of the college but also by technicians and industrial researchers throughout the country. Plans have been made to form a National Center of Agricultural Documentation, similar in quality and scope to the National Socio-Economic Library of the Central Bank.

Several of the national ministries in Managua had libraries of note by December 1972. The Ministry of Public Health and the Ministry of Industry and Commerce each had a library of at least 5,000 volumes; these libraries were reasonably well organized and each served a large number of readers.

The library of the Supreme Court of Justice, a governmental special library, exemplifies by its rapid growth the strong national interest in information resources. It was officially founded in 1968, with a few reference books. A knowledgeable librarian was soon enlisted, and by 1972 the collection had grown to over 4,000 volumes and served not only the Supreme Court but also judges and lawyers throughout Nicaragua.

Library Associations, Library Education, and International Affiliations

LIBRARY ASSOCIATIONS

There are two library associations in Nicaragua; they are organized along somewhat different lines, but the membership and the objectives overlap to a certain extent. The largest of the two, the Nicaraguan Association of Libraries (ASNIBI) was officially founded in 1967, with the following aims: to encourage the professional education of librarians; to be concerned with the status and remuneration of library personnel; to maintain relations with similar associations in other countries;

and to collaborate toward the general development of library services in Nicaragua. Membership in this association is drawn chiefly from the national, public, and school libraries, although the university libraries are also nominally represented. As of 1973, there were 124 members.

The Nicaraguan Association of University and Special Libraries (ABUEN) is a smaller body, more specialized in its membership, but notably active in Nicaraguan library affairs and development. Among its various activities, which have included exhibitions and the sponsoring of library education courses, it publishes the only library periodical in the country, the quarterly *Boletín de la ABUEN*.

LIBRARY EDUCATION

Nicaragua has only recently begun to send its librarians to the United States and other countries for advanced degrees; previously, the only professional librarians in the country were of other nationalities. Many Nicaraguans, however, have received practical library training, and interest and participation in library courses and programs has been consistently great.

For several years, in collaboration with the Nicaraguan Library Association and AID, the Ministry of Public Education has been offering summer courses principally for school librarians, which have been very well attended and which have had a positive influence on the quality of the school libraries. ABUEN has twice offered the UNESCO Audiovisual Course in Library Science, originally prepared at the University of Buenos Aires; again, these classes were very successful, with students from all types of libraries as well as nonlibrarians who wished to enter the field.

In 1972 a proposal was made to establish a library science program at the Central American University, to begin in 1973. Although this is still pending, summer school library courses will begin in 1975.

Although postgraduate library training abroad is quite a recent development, many Nicaraguan librarians, particularly from the universities and the schools, have taken advantage of the short intensive courses offered at the Inter-American Library School at Medellín, Colombia, supported by fellowships from the Organization of American States.

INTERNATIONAL AFFILIATIONS

In spite of, or perhaps because of, its small number of libraries and their relatively modest development, Nicaragua has enthusiastically participated in the programs of international organizations. For several years, Nicaragua was the only Central American country to hold active membership in the Commission for Latin America of the International Federation for Documentation, an organization which meets yearly to discuss Latin American library programs and development. In addition, the National Autonomous University and the Central American University belong to regional federations: the Federation of Private Universities of Central America and the Caribbean held its first conference for librarians in May 1973, at which a librarian from the Central American University participated.

Nicaragua's libraries have had a long and close association with the Library Development Program of the Organization of American States (OAS). In addition to the aforementioned scholarships received for short courses in Colombia, Nicaraguan librarians have recently been sent by the OAS to the University of Puerto Rico and to library schools in the United States for advanced degrees. In 1969, an OAS expert came to the Managua campus of the National Autonomous University to advise on the organization of its library and to train personnel. In 1971, a second expert spent 3 months helping to organize the libraries of the Central American University. Since the Managua earthquake of 1972, the Organization of American States has been the prominent agency for channelling international aid to libraries.

Effects of the Earthquake of 1972

The earthquake of December 23, 1972, which almost completely destroyed the downtown area of Managua and seriously damaged certain outlying districts, had a devastating impact upon the cultural life of the capital city and upon the country as a whole. Schools, libraries, museums, and publishing houses were totally obliterated, along with much which was irreplaceable of the country's cultural heritage. Most of the important libraries of Nicaragua were located in Managua; the earthquake and the resulting fires destroyed, in whole or in part, a majority of these.

The National Library building was demolished by fire, leaving only about 15% of the collection, much of which was damaged. Two years later the remaining books were still in a temporary location, awaiting the construction of new quarters. The National Archives, with its invaluable collection of colonial and other manuscripts, was completely destroyed. The Central American Library lost 25% of its collection; however, it was soon relocated and has continued to function since April of 1973. The Nicaraguan–American Library ceased to exist.

The school libraries of Managua suffered overwhelming damage. Fifty-five were destroyed completely along with their buildings, and 94 were partially destroyed. The losses involved not only books but also furnishings and equipment. A majority of the school libraries had to be relocated.

The university libraries, which in 1972 possessed a total collection of more than 73,000 volumes, also suffered serious losses. The National Autonomous University in León was undamaged, but the branch in Managua lost its building, considerable equipment, and more than 25% of its book holdings. The libraries of the Central American University were even less fortunate. The two-story modern library building was destroyed beyond repair. The Central Library lost some 1,500 volumes, with another 3,000 damaged; even more serious were the losses of equipment, such as book stacks and furnishings. The valuable Historical Collection was packed into boxes and moved into storage, where it suffered further from dampness and insects. The historical manuscripts (virtually the only ones in the country after the destruction of the National Archives) remain intact, but the museum lost at least one-third of its pre-Columbian ceramic.

Many special libraries in Managua—including those of the Ministries of Public Education, Treasury, and Economy, as well as that of the National Bank—were totally or almost totally destroyed. The important library of the Central Bank lost only 5% of its collection, but the building could no longer be used. The library at INCAE (Central American Institute of Business Administration) is located above the city and remains intact; the institute became involved in several projects for reconstruction, and its library is an invaluable source of information for development.

Post-Earthquake and Long-Term Library Development

Although a major tragedy in every respect, the earthquake did serve to focus national and international attention upon the cultural life of Nicaragua, in particular upon its hitherto somewhat neglected libraries. Aid to libraries came from many sources, including UNESCO, foreign governments (particularly Spain), and private individuals. The principal source of technical assistance was and will continue to be the Library Development Program of the Organization of American States.

On January 27, 1973, little over a month after the disaster, the Library Development Program of the OAS called a meeting of interested persons from libraries and other institutions in the United States. Simultaneously, Nicaraguan librarians were meeting to evaluate their needs and to formulate plans. At the United States meeting it was determined that a special committee of SALAAM be founded for Nicaraguan relief, that the Chief of the Library Development Program should visit Nicaragua, and that the OAS would be designated as the clearinghouse for library relief efforts.

When the chief of the Library Development Program visited Managua in March 1973, a new and forceful consolidation of Nicaragua's libraries was evident. Members of both library associations were present, and detailed reports from each type of library were offered. Library restoration and progress were explored on every possible front, from the use of Peace Corps Volunteers to a projected cooperative regional cataloging project. Stress was on both short- and long-term planning, to ensure the best use of the technical and financial resources available.

In 1973, considerable progress was made. Two Peace Corps librarians came to work at the Central American University Library. Certain Nicaraguan librarians were sent abroad for study. The Historical Collection at the Central American University was relocated and the materials were undergoing repairs. Most important, the National Commission for Libraries was established, under the Ministry of Public Education; this body consists of representatives from each type of library and is dedicated to library development on all levels and on a national scale.

In January 1974, a Task Force from the Kent State University Library School was sent to Nicaragua by the OAS, to evaluate the library needs of the country and to plan for future developments. A detailed report was prepared, chiefly concerning the direction in which Nicaraguan libraries ought to proceed and the possibilities

for doing so. The most urgent problems were seen as: lack of trained personnel; lack of sufficient and up-to-date bibliographical resources; lack of adequate buildings and facilities; and needless duplication in cataloging and acquisitions efforts. Recommendations were specifically made for a national cooperative cataloging program, a national acquisitions program, a library education program, and for the already planned establishment of the National Socio-Economic Library of the Central Bank.

Nicaraguan libraries may be in a state of evolution—or better still, of mutation. Formerly one of the least developed countries in Latin America in terms of its libraries and library education, Nicaragua may soon, through the efforts of its own librarians and through assistance from abroad, find itself in the vanguard of library development in the area.

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EILEEN BLOCH

NICHOLSON, EDWARD WILLIAMS BYRON

The name of Edward Williams Byron Nicholson (1849–1912) is not well known among librarians. Few realize that he was mainly responsible for the first International Conference of Librarians ever held and for the foundation of the Library Association of the United Kingdom in 1877. Better known as Bodley's librarian, he was responsible for guiding that institution into the 20th century and preparing it for the insatiable demands of the modern scholar (*1*).

Nicholson held firm ideas on librarianship and ignored all opposition. Inevitably he made enemies, but was genuinely upset when people failed to realize how deep was his concern for libraries, especially the Bodleian. As he sailed down the High Street on his bicycle, wearing eye-catching, colored clothes under the customary M.A. gown, a battered straw boater, and a monocle, he would be pointed out to American tourists as an eccentric. But his striking appearance concealed one of the most forward-thinking and active librarians of his day.

Born on March 16, 1849 at St. Helier, Jersey, E. W. B. Nicholson spent his childhood in Llanrwst, North Wales, before attending Tonbridge School. In 1867 he won a scholarship to Trinity College, Oxford, to study Classics, but suddenly changed to Law and Modern History, obtaining only a third-class degree in 1871. He gained a reputation by his strong liberal speeches in the Oxford Union, but made many enemies by his involvement in Union disputes. Even then, controversy dogged Nicholson, and his fighting spirit as an undergraduate foreshadowed the battles of his later career. He was librarian of the Union in 1872–73.

After a few months as a teacher, he successfully applied for the post of principal librarian and superintendant of the London Institution. This proprietary institution was rather stagnant when Nicholson arrived in January 1873; its lectures were sparsely attended and both libraries grossly under-used. The number of members (and therefore its income) had been fixed by Act of Parliament, and most of these preferred the institution as a social club. Nicholson proceeded to expand the Circulating Library and reclassify the entire Reference Library of over 60,000 books, believing in minute classification "to the utmost degree short of confusion." By making the lectures more popular and instituting a new class of membership, he attracted enough new members to finance his improvements to the libraries. Many of his achievements at the Bodleian were anticipated by his experiments in cataloging, classification, binding, and employing young boys for routine work (*2*).

Publicity was always welcome, and Nicholson reported his progress to the monthly meetings of the Library Association. Nicholson had himself taken the leading part in its foundation—and at the age of only 28. After the 1876 Conference of Librarians in Philadelphia, when the American Library Association had been set up, Nicholson wrote on his own initiative to the heads of Britain's five national libraries, four of whom agreed to support a similar conference in Britain (*3*). As a result the First International Conference of Librarians was held in the London Institution on October 2–5, 1877. John Winter Jones of the British Museum presided, while most of the administrative work was shared by Nicholson and H. Tedder

(4). Over 200 librarians attended, including 16 Americans led by Justin Winsor and Melvil Dewey (5).

Nicholson's own contribution was a paper extolling the virtues of buckram binding, though he later tempered his enthusiasm (6). The conference established the Library Association of the United Kingdom (LAUK) and immediately set up subcommittees to continue discussions on the most important topics raised.

Due to pressure of work, Nicholson resigned as joint secretary of the association in 1878, but continued as an active member of the Council. He helped with the LAUK Cataloguing Rules, the abortive General Catalogue of English Literature, and schemes for educating assistants. Unfortunately he attempted too much too quickly, and when the rest of the association hesitated over his schemes, his temperament overcame his good sense. His attacks on the association's financial management provoked angry protests: plain-speaking was Nicholson's strong point, never diplomacy.

Trouble arose from the Metropolitan Free Libraries Association, which he had formed in 1879 to promote rate-supported libraries in London. Due to the ineffectual state of existing legislation, it met with no success. So in 1881 Nicholson drafted a Free Libraries Bill to simplify the establishment of libraries by local authorities; however, it caused a furor among provincial librarians. They resented that a Londoner, and not even a *public* librarian, should draw up such a bill without consulting them. The bill was amended but never passed through Parliament (7).

Rebuffed, Nicholson felt that the Library Association, now dominated by public librarians, was refusing to initiate reforms for fear of exciting controversy, and that improvements suggested by nonpublic librarians would be rejected by public librarians. After a heated meeting on December 2, 1881, Nicholson resigned from the Council. Henceforth he vowed to take no further part in Library Association affairs, a promise he kept until his death, even refusing the presidency.

Nicholson's main ambition was to make his name as a writer. During his active years in the Library Association he managed to publish poetry, an antivivisection book, two Biblical commentaries, and to devise a phonetic alphabet. To Nicholson's incomprehension, none was well received. When one reviewer described his poems, *The Christ-Child*, as "rubbish, pure and simple, from beginning to end" (8), Nicholson, with his customary scorn for critics, used this as an advertisement in subsequent books. In 1881 he sought the editorship of a popular magazine, at the same time applying for the vacant Bodleian librarianship. The magazine project collapsed, and in February 1882 Nicholson was elected to the Bodleian (Figure 1).

The appointment was not popular, since no one rated Nicholson as a scholar like his predecessors. This attitude died hard, as Nicholson ruefully commented in 1894:

The truth is that by certain persons the present Librarian is regarded as being what the Americans would term a one-horse librarian—who was well enough suited, perhaps, to the London Institution, and would be doubtless fitted to manage the Birmingham Free Library— but not to be mentioned in the same breath with the real heads of his profession (9).
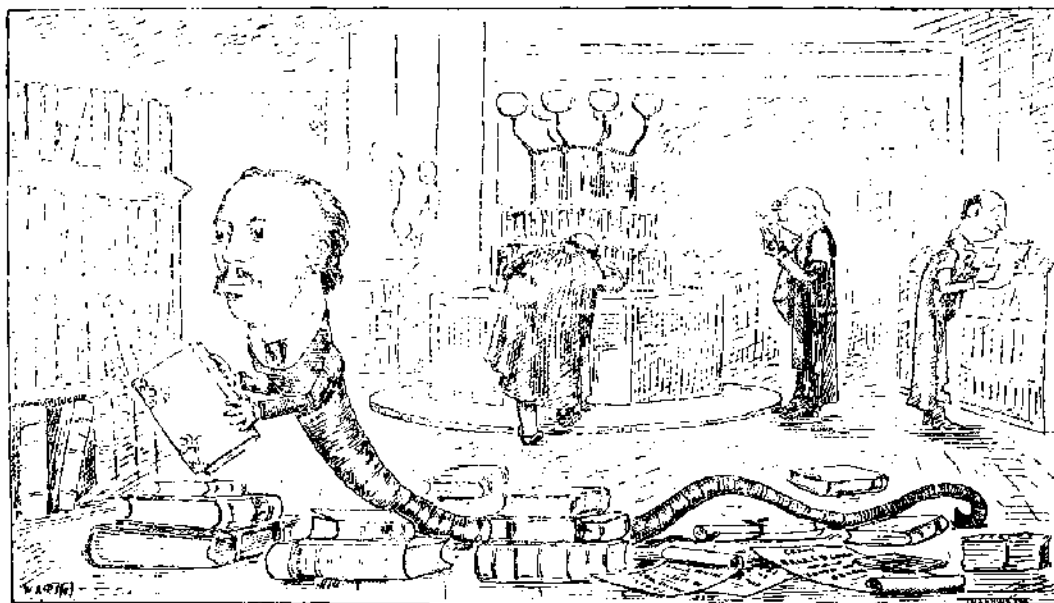
FIGURE 1. *Bibliophylax bodleianus, or ordinary book-worm* (Oxford & Cambridge Undergraduates' Journal, *November 13, 1884*).

But the recent University Commission had emphasized the need for reform in Oxford, and the appointment epitomized the changes which were transforming the university into a modern institution, instead of a clergyman's retreat (*10*).

The state of the library was far from satisfactory. Out of a total stock of almost 400,000 volumes, many lay strewn throughout the rooms and had never been properly cataloged. The problems were easy to define—lack of finance, staff, and suitable accommodation—but the solutions taxed Nicholson for 30 years. The money problem was never adequately overcome: It was always a bone of contention that until 1903 the Bodleian's revenue never exceeded £9,000 per annum, about one-seventh that of the British Museum. Nicholson had to rely on grants for specified purposes, often with no hope of renewal. Public appeals produced nothing, and when W. E. Gladstone approached Andrew Carnegie on Nicholson's behalf, that doughty Scot remained unmoved.

Financial relief eventually arrived in the shape of Lord Brassey and the Oxford University Endowment Fund of 1907. This fund aimed at raising money for the whole university, with first priority for the Bodleian: Over £12,000 was given for a new bookstore alone.

In 1882, only three members of the staff could be called "professional" librarians—Adolf Neubauer, the Orientalist; W. D. Macray, the library's historian; and Falconer Madan, the bibliographer. Nicholson economized by recruiting cheap boy-labor, and "Extra Staff" for cataloging, paid by the hour and dismissed if money was not forthcoming. Many of the library's curators opposed the boys, because of the danger of theft and misbehavior, but Nicholson resolutely defended

them. Even after a boy had stolen several Mather tracts, Nicholson personally offered to stand surety of £1,000 for all of the boys. His treatment of them was eccentric—they had to learn to swim, and he taught them Latin and Greek when the library was closed—but his concern for their welfare was genuine, as shown by his *Staff-Kalendar*, the first published manual of library practice of its kind (*11*). Yet this same manual reveals Nicholson's main weaknesses—his attention to minute detail, however trivial, and his refusal to delegate responsibilities.

Women were encouraged to join the temporary staff, but only in 1910 could the first full-time female assistant be employed, after opposition from those who considered that a library was no place for a woman. But as Nicholson pointed out:

> I presume that every woman in England worth her salt who has had the chance of climbing an appletree has climbed it, and would gaily ascend on a ladder to any Bodleian ceiling if no one was looking at her.

One of Nicholson's first tasks was to extend the accommodation for books by fitting up the Old Schools (the ground-floor rooms encircling the Bodleian Quadrangle) and the Sheldonian Theatre basement. With the Radcliffe Camera and Ashmolean basements full by 1896, more space still was needed. On Nicholson's insistence, plans were made for an underground bookstore capable of holding 1 million octavo volumes. Not until 1909 were funds secured, contracts signed, and work begun. On its opening in 1912, it was the first underground store to be constructed in Great Britain on such a large scale, and made full use of rolling bookcases (*12*).

Accommodation for readers also needed improvement. Modern books were read in the Radcliffe Camera, where Nicholson extended the gallery and formed an open access "Select Library" of reference books. Older books and manuscripts had to be used in Duke Humfrey's library and the Selden End, where space soon became cramped. For years Nicholson battled to convert the north wing of the upper story of the Bodleian (then a Picture Gallery) into a reading room, and only succeeded in 1907. Conditions were far from good. Heating was unreliable, and if the cold draughts did not deafen readers and staff, then the poor lighting damaged their eyes. Electric light was forbidden in the main building, as was any device likely to prove a fire risk (including the telephone), and so during the winter the library closed at 3 P.M.

Under the Copyright Acts the library is entitled to a free copy of every book published in the United Kingdom. With purchases and donations as well, the library increased its stock during the 30 years under Nicholson by the equivalent of half a million octavo volumes. The strain on the available space was exacerbated by Nicholson's policy of claiming anything printed—bus tickets, menus, Valentine cards, and other ephemera. Most of this was thrown out during the 1940s but was acquired by John Johnson, the university printer. When the curators repented in 1968, this valuable collection of printed ephemera returned to the Bodleian to become one of its prized possessions (*13*).

Notable accessions included the St. Margaret's Gospel Book, the Shelley relics,

many Sanskrit and Oriental manuscripts, and college manuscripts on deposit. Most important of all was the recovery of the First Folio of Shakespeare, snatched from the grasp of Henry C. Folger by Nicholson's prompt appeal for money (*14*). Yet many prizes were missed, and the main criticism of Nicholson's management is that too much money disappeared on administrative expenses. Rarely was more than £1,900 spent on purchases in any one year, while the annual total for binding often exceeded £1,000. In 1890 this policy was publicly criticized by university members led by two curators, whom Nicholson dubbed a "miserable cabal" (*15*). The criticisms had no effect except to reveal the antagonism which several curators had been showing toward Nicholson in private.

The university had already experienced one memorable battle involving Nicholson and the curators, namely the lending controversy of 1887. Nicholson had inherited a scheme which allowed certain professors and others to borrow books and manuscripts, though strictly against the library's statutes; but a diligent curator, Professor H. Chandler, mercilessly attacked Nicholson and the curators for allowing the depredation, as he saw it, of the library. Once you begin lending, he said, it will always continue:

> To suppose that it will not, is as insane as it would be to imagine that you could jump off the Monument (I assume the cage off), and stop after you had fallen ten feet. No; gravity (and in the case of the Bodleian, levity) would tell . . . (*16*).

Despite his defense of the lending privilege, Nicholson was defeated in a poll of university members; this was also the first occasion that Nicholson and his deputy, Madan, opposed each other in public.

Another source of criticism was the catalogs. Under H. O. Coxe the author catalog had grown to 741 volumes of hand-written slips. But the headings were in Latin, I and U were intermingled with J and V, respectively, and form headings were numerous and cumbersome. A new cataloging code was devised in 1882, based on the LAUK rules which Nicholson had helped to draft (*17*). Thousands of arrears were tackled but took decades to overcome. Not until 1907 could Nicholson afford extra staff to revise the pre-1883 unanglicized slips. In 1920 this catalog was "closed," and a new one started.

The great problem was the subject catalog, started in 1879 and consisting of thousands of slips stored in boxes. The 73 subject divisions of Coxe's classification scheme were increased by Nicholson to over 7,000, using a decimal notation (*18*). The classification number served as the first element of each pressmark, to which Nicholson added a letter (a–g) denoting size, and a running number within each division. Thus the slips could easily be arranged to serve as a subject catalog, while books shifted to other shelves did not need their pressmarks changed. Unfortunately, many curators failed to grasp how useful this catalog could be, and how books could be shifted *without* altering pressmarks. This was when fixed location was still common—in fact Cambridge University Library retained it until 1900. Nicholson once intended to rearrange the whole library according to his minute scheme (and so provide subject reading rooms), but abandoned it because

of the size of the task and the recognition that it is undesirable to break up historic collections.

The leading critic of the subject catalog was Professor Chandler, who asked who had tied this "millstone" round the librarian's neck (19). Despite this, a committee of inquiry voted for its continuance, after an appeal from Nicholson:

> Should the Curators order me to discontinue the subject-catalogue and close shelf-classification, the entire period of my remaining tenure of office would be embittered with a sleepless regret.

For several years he had demonstrated its usefulness by providing any reader on request with all the catalog slips touching on their particular subject. Lack of staff halted this, and the slips fell into disuse.

Nicholson personally supervised the printing of many special catalogs, chiefly of Oriental manuscripts. Nevertheless over 9,000 Western manuscripts remained inadequately, or not at all, cataloged until a petition urged an immediate start to an abbreviated catalog. Nicholson vigorously opposed the idea, as he favored minute cataloging; but expediency overruled perfection, and in 1890 Falconer Madan began the *Summary Catalogue of Western Manuscripts* (20).

Also in 1890, the tension between librarian and curators heightened dramatically. The curators had excluded Nicholson from their meetings and were attempting to curb his reforming zeal, even forbidding displays of manuscripts. In May, Nicholson printed a pamphlet requesting the right to attend their meetings and argue his views; but to little avail. In the next year he was censured following accidents to a Zend manuscript and some papyrus fragments under repair (21). The extension of the library also brought problems, since the curators objected to the constant shifting of books without permission, and so forbade it in 1893.

Three years later, attempts were made to possess the neighboring Ashmolean, but the University Council invited a British Museum librarian, Henry Jenner, to report on other means of Bodleian extension. Jenner suggested diminishing copyright accessions and simplifying the shelf-classification, as favored by many curators. Nicholson, deeply offended at being, as he considered, investigated by an outsider, attacked Jenner's proposals in no uncertain terms.

And so Nicholson took his boldest step against his critics. In December 1896 he addressed a questionnaire to over 100 librarians, seeking in effect a vote of confidence in his abilities. Among 24 questions, he asked whether a library should adopt minute shelf-classification, whether a national library should exclude nothing, and whether it was right for a librarian to be continually opposed by a committee which refused to listen to his views on librarianship. The result was an average vote of 85% in support of his policies, while the last question was answered in Nicholson's favor by 95%. On further consideration the curators decided that Jenner's measures would not produce worthwhile economies.

By now Nicholson had developed a strong complex against interference in his duties. "I live the life of a hunted animal," he once said, "always *dreading* attack when I'm not *being* attacked."

The climax occurred in 1898 when a committee of inquiry investigated his exhibitions of manuscripts and the continued shifting of books. In a pamphlet, *The Statutory Positions of the Librarian and Curators of the Bodleian*, Nicholson asserted that they had no legal power over him whatsoever and he threatened to take them to the highest court in the land:

> From beginning to end of the [Bodleian] statute there isn't one word authorizing them either to order the Librarian to do anything, or to prohibit or restrain him from doing anything; or directing or recommending the Librarian to follow their instructions or advice in a single point of his duties.

Diplomatically the curators side-stepped the challenge, agreeing with many of Nicholson's ideas, but not denying their right of absolute control over library and librarian. Nicholson's first major nervous breakdown brought a temporary end to hostilities in 1901.

The year 1902 is the cornerstone of Nicholson's reign, marking the Bodleian Tercentenary and the publication of the vice-chancellor's *Statements of the Needs of the University*. The library's shortcomings were clearly spelt out by curators and librarian—though both naturally disagreed on which needs were most pressing. Nevertheless, thanks to the vice-chancellor and Lord Brassey, the finances began to improve during this last decade of Nicholson's life, and many of the needs were met.

Unfortunately Nicholson's health was deteriorating, and he suffered breakdowns in 1907 and 1910. Since he refused to delegate any responsibility, the work of the library gradually ceased in his absence. Continual confrontations over the new bookstore only aggravated his condition. The Senior Sub-Librarian, Falconer Madan, hardly helped: for over 20 years they had disagreed on literally everything to do with library administration, as seen in the *Summary Catalogue*, where Nicholson occasionally added his own comments on manuscripts already described by Madan (*22*). As Nicholson's attendance at the Bodleian grew more infrequent, Madan did not fail to chronicle his shortcomings with characteristic precision; Madan's comments on his chief's sanity reflect little credit on that distinguished bibliographer.

By 1911 the arrears of work were so considerable that a special committee investigated the librarian's fitness. He steadfastly refused to resign, denying he was ill, but finally, on Tuesday, March 12, 1912, he accepted 1 year's leave of absence. Five days later, he was dead.

Despite his gruff personality and uncompromising manner, E. W. B. Nicholson achieved more for the Bodleian than any previous librarian. Always aware of his readers' needs, he embraced all modern innovations, even if he sometimes set his hopes too high, as, for instance, when he introduced a photographic department and planned to reproduce facsimiles of all their manuscripts and rare books. The curators' interference only spurred him to increased effort, and this, along with the hostility of Madan, brought about his breakdown.

Nor was criticism confined to the library; from 1890 he wrote on Keltic (*23*)

subjects, much to the consternation of better-informed scholars who poured scorn on his researches. He composed stories, music, even a play, but to his lasting regret his prolific literary output never brought him the reputation he felt he deserved.

His most important contribution to scholarship was probably his study of early Latin musical manuscripts, the product of his last years when he could do little else but devise extraordinary schemes, such as manufacturing pictorial biscuits. His decline was saddening and made his critics overlook his earlier accomplishments and later reforms, many foreseen in the 1880s. Nicholson's published report of just the first 6 years of his administration remains a monument to his industry (24), and forms a record which few of his contemporaries equaled in their entire careers.

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23. Nicholson always spelt the hard "C" as a "K." This was one of many similar foibles, e.g., he preferred to spell "rhyme" as "rime," believing that the latter form was older and therefore etymologically more correct.

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K. A. MANLEY

NIGERIA, ACADEMIC LIBRARIES IN

Academic libraries in Nigeria have their origin with the beginnings of higher education in the country. University education in Nigeria is of relatively recent vintage. The first University College was established in 1948 at Ibadan. Prior to this date, the only seat of postsecondary education was the Yaba Higher College (1934–1947) in Lagos. The existence in the Northern areas of a centuries-old literary and scholastic tradition along Arabic-Islamic lines also produced libraries, but of a type not to be considered in this survey. Today, there are six universities in Nigeria, five of which have been established since independence in 1960 (Table 1).

Ibadan University Library

Established as University College, Ibadan, in 1948 and affiliated to the University of London, the University of Ibadan became fully autonomous in 1962. The library, which now has a collection of some 280,000 volumes, was fortunate from its beginning in acquiring by gifts, deposit, or purchase a number of substantial book collections. At its inception, the library of the then defunct Yaba Higher College was acquired. This consisted of a collection of some 10,000 volumes, most of which were, however, of mere secondary school standard. A more important acquisition was the 18,000-volume private library of Dr. Henry Carr (1863-1945), who presented an outstanding example of the bibliophilic tendencies prevalent among the Nigerian intellectuals of his age. He was one of the great public figures of his era: educator, lawyer, churchman, and a civil servant who rose to be the first African Commissioner of Lagos Colony, Chancellor of the Diocese of Lagos, and Honorary Doctor of Laws of the University of Durham. His private library, which he began to build as a young student, was the largest collection of books known to have been assembled by anyone in West Africa, public or private, at that time and included much of the world's great literature: the classics of ancient and modern times, English literature, English history; major works in the social and anthro-

TABLE 1

University Libraries in Nigeria

Uni-versity	Year founded	Students, 1972/73	University staff, 1972/73	Volumes in library, 1972	Serials	Budget, 1972-73, N	Profes-sional librarians	Other staff	Bindery
Ibadan	1948	4,500	600	260,000	4,764	320,000	26	103	yes
UNN[a]	1960	3,891	482	114,000	1,311	102,252	31	121	yes
Lagos	1962	2,000	300	150,000	3,500	218,262	20	80	yes
ABU[b]	1962	4,000	550	110,000	2,350	109,283	17	72	yes
Ife	1962	4,300	678	130,000	3,200	126,000	20	60	yes
Benin	1970	650	80	15,000	1,000	103,023	4	20	yes

[a]University of Nigeria, Nsukka.
[b]Ahmadu Bello University.

pological sciences; sizable collections in biography, education, and psychology; as well as topical literature: political, social, and religious. As an African churchman, his library reflected this interest and as a well-read African, his library also contained much literature on Africa and Africans in the Americas. There were also extensive files of missionary magazines, a mass of Nigerian church pamphlets enormously valuable for the study of African history, and many departmental-printed reports collected by him as inspector of schools and later deputy director of education for Lagos Colony.

The founding librarian, Professor W. J. Harris, who was largely responsible for this acquisition and for purchasing very many valuable and rare works on Africa, was also instrumental in the acquisition of another unique and valuable collection. Herbert H. S. Macaulay (1864–1946), known as the "Father of Nigerian Nationalism" was another octogenarian prominent in Nigeria during the first half of the 20th century. A fellow of the Royal Geographical Society (1892), graduate of the Royal Institute of Civil Engineers (1903), surveyor of Crown lands for the Colony of Lagos, he became more famous as owner and editor of several Lagos newspapers and the founder of the first Nigerian political party. Although Macaulay's collection contained only about 500 printed books (many of which, though, were rare Nigerian publications), its great importance lay in the vast assortment of political pamphlets, local and foreign newspapers, government documents, minute books and papers of various societies, maps and plans of early Lagos and other towns, personal papers of all kinds including letters many from noteworthy West Africans and Afro-Americans, diaries, business documents, photographs, and other ephemera numbering thousands of items. This collection—to which several other notable collections of private papers and manuscripts have since been added, including a very extensive collection of early Arabic documents of West African origin—has made the Ibadan University Library an invaluable depository of Nigerian historical source materials.

In 1950, the library was designated as the legal depository for two copies of everything published in Nigeria. Lists of these acquisitions are to be found in the annual *Nigerian Publications: Current National Bibliography,* published by the Ibadan University Library until this task was assumed by the National Library.

In 1954, the library moved to its present location. The building was designed to house a capacity of 250,000 volumes and 250 readers (Figure 1). Since the collection, then, only contained approximately 80,000 volumes and 1,300 current serials, the general opinion was that the university had overestimated its needs. However, the tempo of progress in Nigeria has exceeded all expectations. By the mid-1960s the library was finding it extremely difficult to accommodate its readers and book space was at a minimum. In 1969 a new extension was opened which added 56,000 square feet to the 46,000 square feet of the main library building. This brought the total capacity of the library to half a million volumes.

The Research Library, as the new extension was called, was designed principally for readers engaged in advanced studies. It admits only senior members of the university, research scholars, and postgraduate students. It houses the reference, Africana, and serials collections as well as the rare books, manuscripts, and govern-
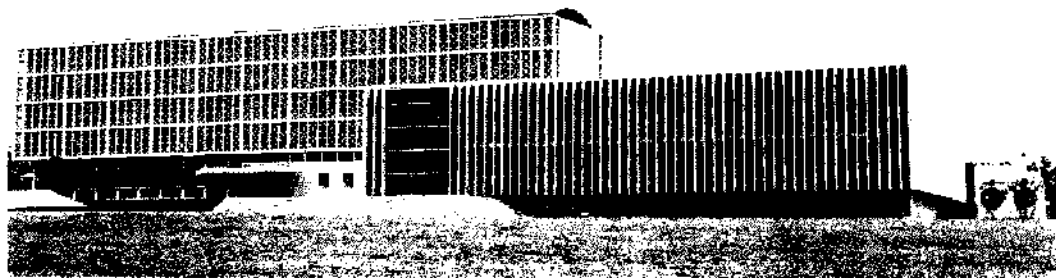
FIGURE 1. *Ibadan University Library.*

ment documents. These collections are primarily for reference purposes and are kept in the building, which is completely air conditioned by a thermostatically controlled, low-pressure, ducted air system which is virtually noiseless. This feature is important for the preservation of the books in a humid climate where mold and mildew are frequent. To reduce the cost of air conditioning, window space was reduced to a minimum and confined chiefly to the ends of the building where, *pari passu*, work areas and study carrels are located. A double wall has been used, which creates an air space that acts as an insulator around the walls and ceiling.

The library uses the Bliss Bibliographical Classification.* The collections are on open-access with the exception of those in the Research Library. Within the Ibadan University Library system there is a Medical Library, and several faculty sub-libraries and reading rooms. A union catalog is presently being prepared for these collections. The staff consists of 26 professionally trained librarians and 103 supporting intermediate and junior staff. The book collections are richest in bibliography, African history and culture, the natural sciences, and the tropical aspects of medicine and agriculture. There is also a good librarianship collection which serves students of the department of Library Studies in the university. A well-equipped reprographic unit and an excellent bindery are also available. With a collection of 280,000 volumes and 5,000 annual journal subscriptions, the Ibadan University is the largest library in Tropical Africa (i.e., that area of the Continent lying in the Torrid Zone between the Tropic of Cancer and the Tropic of Capricorn).

Libraries in the University of Nigeria, Nsukka

The University of Nigeria, which is located in the town of Nsukka in the East Central State of Nigeria, was formally opened on October 7, 1960, as the climax to the Nigerian Independence celebrations in the then Eastern Region of the Federation. This event marked the culmination of many years of thought and discussion by several Nigerian leaders, who were inspired principally by the then

* Since 1974, the Library of Congress classification scheme has been introduced.

Premier of the Eastern Region, and later President of the Republic, Dr. Nnamdi Azikiwe. In 1961, the former Nigerian College of Arts, Science and Technology, in Enugu, was incorporated into the university, and its buildings now form the Enugu campus of the university.

The library of the main campus is known as the Nnamdi Azikiwe Library. It consists of three floors, with a book capacity of 250,000 volumes, and was occupied in September 1961. At that time the collection numbered 21,300 volumes. With the addition of the resources from the Nigerian College of Arts, Science and Technology, another 8,000 volumes were added to the overall collection.

During the 1963/64 session, the Law Faculty Library was established at Nsukka while the Economic Development Institute established a library on the Enugu campus with funds received from the Ford Foundation. By 1967, the book stock of the total university library complex numbered some 102,642 volumes, and 2,313 current periodical titles were being received regularly.

The period between 1967 and 1970 was one of crisis in Nigeria and the University of Nigeria was particularly hard hit by the events of that time. All university activities were totally suspended and, due to war activity, some collections such as those at the Economic Development Institute and the Enugu campus were almost totally destroyed. Other losses included works which are virtually irreplaceable, especially from the Africana collection, as well as all microforms, furniture, bindery equipment, audiovisual equipment, and, in fact, most of the other normal library equipment. The total collection now numbers 114,000 volumes.

Another great loss during the civil crisis was the destruction of the private collection of Dr. Nnamdi Azikiwe, for whom the university library was named and who had donated some 8,000 volumes to it at its inception. Dr. Azikiwe's personal collection consisted of several thousand rare and important works on Africa, many personally autographed by the authors; as well as files of newspapers, journals, theses written by African students and presented to him; and personal journals, letters, and other documents accumulated over the years of his active political career. These were carefully cataloged and housed in a four-story personal library equipped with microfilm readers and other facilities which he made available to research students at the university. The loss of this collection is a serious blow to African scholarship and the study of Nigerian history.

The University of Lagos Libraries

The first academic year of the University of Lagos commenced in October 1962. The university itself was established with the aim of giving special emphasis to courses in Commerce, Business Administration, Economics, Social Sciences, higher technological studies, and the training of graduate teachers, as well as developing a Medical School and a Faculty of Law. Since then, Schools of Asian and African Studies; Environmental Design; and Biological, Mathematical, and Physical Sciences—in addition to Institutes of Mass Communication, Child Health, and Computer Sciences—have all been added to the university.

The university library began without any endowments or bequests. The first librarian, Miss E. M. Moys, through enlisting the sympathy of a number of people and institutions outside Nigeria, was able to solicit a great many donations. In most cases, the staff were consulted by the prospective donors before the books were selected, a procedure which made the gifts doubly welcome. By 1965, when the present main library building was constructed (now known as the Yakubu Gowon Library), the collection totaled 44,400 volumes.

The total floor area of the four-story Yakubu Gowon Library is 63,360 square feet. It is designed to provide seating accommodation for about 800 readers and has a capacity to hold 250,000 volumes. Other facilities include ample work rooms and staff offices totaling 8,172 square feet, a lecture theater, the computer center, the audiovisual center, and a large exhibition and browsing area. The whole building is totally air conditioned.

It is arranged in a compact square shape with the ground floor 144 × 144 feet and the three upper floors each 120 × 120 feet. This arrangement gives a terrace around the building at the first floor level. Flexibility has also been achieved by dividing the main areas of 120 × 120 feet into 25 modules of 24 × 24 × 12 feet each. The main columns, which bear all the weight, are of cruciform design, with a section area of 5 square feet. The fixed services, stairs, toilets, and staff lift, are situated off center, dividing the building into three basic sections, each 5 modules long.

The library now has a stock of over 100,000 volumes and subscribes to over 3,000 journal titles annually. Books are classified according to the Library of Congress Classification Scheme and are arranged on open access to readers. It is a depository for all books published in Lagos State, and also a depository for the publications of several international organizations including the United Nations Economic Commission for Africa (ECA); the General Agreement on Tariffs and Trade (GATT); the International Court of Justice; and the International Labor Organization (ILO).

In addition to its main campus, the university also has the College of Education and the College of Medicine, each of which operate on their own separate budgets and have their own separate libraries. The library collections are, however, under the direction of the university librarian.

General emphasis has been placed on the collections in Medicine, African Law, Engineering, and Oceanography. The library has a unique gramophone record collection designed to preserve all recordings of Nigerian musicians. It also contains a growing collection of private papers of eminent Nigerian personalities. Publications include a monthly accession list known as *Library Notes*.

The Libraries of Ahmadu Bello University

Ahmadu Bello University came into existence, legally and actually, in October 1962, in the city of Zaria, in the present North-Central State of Nigeria. Most of the faculties of the university developed out of departments of the defunct Nigerian

College of Arts, Science and Technology; the Institute of Administration, the Abdullahi Bayero College, Kano; and the Institute for Agricultural Research, which were incorporated at the foundation of the university.

The university presently has eight libraries in operation. These are:

Kashim Ibrahim Library, which is the major library on the main campus in Zaria. It has a stock of over 110,000 volumes and subscribes to more than 2,350 current serials.

President Kennedy Library of the Institute of Administration located in Zaria, which has a stock of over 48,000 volumes and 420 current serial subscriptions dealing primarily with Law and Social Sciences.

Library of the Institute of Agricultural Research, which is also located in Zaria and has a stock of 9,000 books, 10,200 pamphlets, 520 microfilms, and 700 journals catering to postgraduate research in Agriculture and its ancillary sciences.

Abdullahi Bayero College Library in Kano, with a stock of some 18,322 volumes and 160 current serials concerned primarily with Arabic and Islamic Studies.

Clinical Medical Library at the University Hospital in Zaria, established in 1969 and containing 4,000 volumes and 305 current serials.

Institute of Education Library, a working educational library restricted to staff, educational researchers, and teachers in primary and teacher's education.

Samaru Library, created in the absence of a public library to cater to the needs of the university's intermediate and junior staff members and their families and to serve as a training laboratory for the students of the Department of Library Science in the university.

University Staff School Library, especially designed for the use of the teaching staff in the school and to provide them with teaching materials.

The growth of this library system in many ways highlights some of the problems of university libraries in developing countries. When the Kashim Ibrahim Library was opened, it had no electricity. As a result, service had to be restricted to the daylight hours. Moreover, since the university library was located in an area where there were no other types of libraries for many miles, it became necessary for the librarian to assume responsibilities for services to other classes of readers, hence the development of the Samaru Library, which serves as a public library within the system, as well as the development of the school library, which caters both to teachers and children.

The Kashim Ibrahim Library building was inherited from the Nigerian College of Arts, Science and Technology in Zaria. It is a cube-shaped building with a ground floor and two upper floors having a total area of about 25,000 square feet. The reading rooms are on the upper floors, while the work rooms are located on the ground floor. It was originally designed to accommodate 55,000 volumes and 80 readers, but has already been filled and the present stock of 110,000 volumes and 2,350 current serials have all been crammed into this area. Plans are presently proceeding for the erection of a totally new, £750,000 library building which is expected to be completed during the 1970–1975 plan period.

The Kashim Ibrahim Library has gone through some trying periods. During

1964–65 the entire card catalog was converted to a strip-dex catalog. This abbreviated catalog was, however, not popular with readers and when the then Librarian Mr. W. J. Plumbe left and the new Librarian Mr. J. M. M. Grey-Theriot took up the post, not only did he convert the strip-dex catalog back to cards but also changed the classification scheme from the Bliss Bibliographical classification to the Library of Congress scheme. Readers were, throughout this period, required to use two catalogs and to check for books in two separate places.

The library system is now developing smoothly. It is hoped that when the new library opens, expansion of the collection will proceed at a much more rapid rate.

The University of Ife Library

In October 1962 classes began at the University of Ife, then temporarily located in Ibadan on the site of the Ibadan branch of the Nigerian College of Arts, Science and Technology. This was one of three Nigerian universities to be established in that year. The university initially had five faculties—Agriculture, Arts, Economics and Social Studies (now Social Sciences), Law, and Science. It has since added an additional four new faculties, namely, the Faculty of Education, the Faculty of Pharmacy, the Faculty of Technology, and the Faculty of Health Sciences. In addition, there are the following six institutes and two research units: the Institutes of Administration, African Studies, Education, Physical Education, Agricultural Research and Training, and Population and Manpower Studies; the Small-Scale Industrial Research Unit, and the Drug Research Unit.

During its first 5 years, the university was located on its temporary site in Ibadan. The library at this period was able to reach a strength of some 50,000 volumes with annual serial subscriptions approximating nearly 2,000 titles. In January 1967 the Faculties of Arts, Social Sciences, and Law moved to the permanent site of the university in the town of Ile-Ife about 50 miles northeast of Ibadan. One year later, in January 1968, the Faculty of Agriculture and the Departments of Botany and Zoology also completed their move. This necessitated a division in the library and required the establishment of temporary library quarters at the new site in Ile-Ife. These were established on the top floor of Humanities block, in an area originally designed for classroom use. One can only imagine the amount of inconveniences which students, staff, and librarians suffered during this period.

The new library building on the site at Ile-Ife was opened in October 1969. It consists of four floors, including a lower ground floor opening to the rear of the building and containing the bindery, photocopying section, and service area; the ground floor containing the exhibition area, reading room, processing areas, and catalog; the first floor containing the administration, periodicals and special collections; and the second floor with its seminar room, reading areas, stacks, research desks, and carrels. The building contains 42,000 square feet and is designed to accommodate 250,000 volumes and to seat 900 readers. It contains an air-conditioned area in which most of the research work is conducted.

The present collection numbers approximately 130,000 volumes and 3,200 current serials. In the last 6 years, vigorous efforts have been made to strengthen the collections on Tropical Agriculture, Pharmacy, Biological and Physical Sciences, and Law. The library also includes the Institute of Administration Library, still on the Ibadan site, and the Libraries of Agriculture at Moor Plantation, Ibadan, and Education at the Adeyemi College of Education. Classification is according to the Library of Congress scheme.

Benin University Library

The library at the University of Benin is presently the youngest university library in the country. Established in 1970, it as yet has no permanent site and is housed in temporary buildings on the temporary site of the university.

The librarian of the new library, Professor W. J. Harris, who was also the founding librarian of the Ibadan University Library, has been putting much effort into the establishment of the new university and is presently also serving as the university's acting vice-chancellor, a function which he also performed for 2 years at Ibadan.

The Benin University Library is presently serving a clientele of some 200 readers. Its collection is just over 10,000 volumes and its staff is minimal, with only four professional librarians. Until it is situated in its permanent buildings, overcrowding will continue to be one of its major problems. However, a glance at their annual report for 1971/1972 will indicate that the staff training and general planning that are presently in progress augur well for the future of this new institution.

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<div align="right">Khalil Mahmud</div>