ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE

VOLUME 20

EXECUTIVE EDITORS

Allen Kent
Harold Lancour
Jay E. Daily

ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE

VOLUME 20

ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE

Executive Editors

ALLEN KENT

HAROLD LANCOUR

JAY E. DAILY

Assistant Editor

WILLIAM Z. NASRI

GRADUATE SCHOOL OF LIBRARY AND INFORMATION SCIENCES
AND THE KNOWLEDGE AVAILABILITY SYSTEMS CENTER
UNIVERSITY OF PITTSBURGH
PITTSBURGH, PENNSYLVANIA

VOLUME 20

NIGERIA, LIBRARIES IN, TO OREGON STATE UNIVERSITY

MARCEL DEKKER, INC., New York • Basel

MARCEL DEKKER, INC.
270 Madison Avenue, New York, New York 10016

LIBRARY OF CONGRESS CATALOG CARD NUMBER 68-31232

ISBN 0-8247-2020-2

Current Printing (last digit):
10 9 8 7 6 5 4 3 2 1

PRINTED IN THE UNITED STATES OF AMERICA

CONTRIBUTORS TO VOLUME 20

HUGH C. ATKINSON, Director of Libraries, Ohio State University, Columbus, Ohio: *Ohio State University Libraries*

STEPHEN J. BEST, Local Studies Library, Nottinghamshire County Library, England: *Nottingham Public Libraries*

LEA M. BOHNERT, M.S., Assistant Professor, Graduate Library School, University of Rhode Island, Kingston, Rhode Island: *Nonconventional Technical Information Systems in Current Use (NTISCU)*

GROVER C. BURGIS, Chief Librarian, Thunder Bay Public Library, Ontario, Canada: *Ontario Universities Library Cooperative System*

WILLIAM H. CARLSON, M.A., Director of Libraries Emeritus, William Jasper Library, Oregon State University, Corvallis, Oregon: *Oregon State University Library*

DEWEY E. CARROLL, Ph.D., Dean and Professor, School of Library and Information Sciences, North Texas State University, Denton, Texas: *North Texas State University—School of Library and Information Sciences*

RODERICK CAVE, Ph.D., Department of Library and Information Studies, Loughborough University, England: *Officina Bodoni*

JAMES BENNETT CHILDS, Honorary Consultant in Government Document Bibliography, Serial Division, The Library of Congress, Washington, D.C.: *Official Documents; Official Gazettes*

MARIANNA TAX CHOLDIN, Slavic Bibliographer and Associate Professor of Library Administration, Special Languages Department, University of Illinois Library, Urbana, Illinois: *Novikov, Nikolaj Ivanovič*

ELIZABETH H. COPELAND, Librarian, Sheppard Memorial Library, Greenville, North Carolina: *North Carolina Library Association*

JAY E. DAILY, Ph.D., Professor, Graduate School of Library and Information Science, University of Pittsburgh, Pittsburgh, Pennsylvania: *Nonprint Material: Sound Recordings, Motion Pictures, and Pictures; Novels*

RUTH DAVID, M.L.S., Assistant Professor, School of Library Science, The University of Oklahoma, Norman, Oklahoma: *Oklahoma. University of Oklahoma School of Library Science*

DONALD G. DAVIS, JR., Ph.D., Graduate School of Library Science, The University of Texas at Austin, Austin, Texas: *Office for Library Education, ALA*

JAMES A. DEARDEN, Principal Lecturer, Department of Bibliographical Studies, College of Librarianship Wales, Cardiganshire, Wales: *Nonesuch Press*

ANTON DISCH, Director, Norwegian Center for Information, Forskingsveien, Norway: *Norway, Libraries and Information Centers in: Information Centers*

KATHERINE G. EATON, Assistant Professor, University of Oregon Library Head, Bureau of Governmental Research Library, University of Oregon Library, Eugene, Oregon: *Oregon Library Association*

ROLF H. ERICKSON, Head, Circulation Services Department, Northwestern University Library, Evanston, Illinois: *Northwestern University Libraries*

JAMES F. GOVAN, Ph.D., University Librarian, University of North Carolina Library, Chapel Hill, North Carolina: *North Carolina. University of North Carolina Library*

EDWARD G. HOLLEY, Ph.D., Dean, School of Library Science, University of North Carolina, Chapel Hill, North Carolina: *North Carolina. University of North Carolina School of Library Science*

FRANCES KENNEDY, M.S.L.S., Executive Secretary, Oklahoma Library Association, Oklahoma City, Oklahoma: *Oklahoma Library Association*

FREDERICK G. KILGOUR, Executive Director, Ohio College Library Center, Columbus, Ohio: *Ohio College Library Center*

ROBERT KLASSEN, Office of the Director, Office of Libraries and Learning Resources, Department of Health, Education and Welfare, Washington, D.C.: *Office of Education (U.S.), Office of Libraries and Learning Resources*

F. W. LANCASTER, Professor, Graduate School of Library Science, University of Illinois, Urbana, Illinois: *On-Line Information Systems*

F. F. LEIMKUHLER, Ph.D., Professor of Industrial Engineering, Purdue University, West Lafayette, Indiana: *Operations Research*

JAMES WILSON MCGREGOR, Assistant University Librarian for Technical Services, Northeastern Illinois University Library, Chicago, Illinois: *Northeastern Illinois University Library*

ANDREW M. MODELSKI, Senior Reference Librarian, Geography and Map Division, The Library of Congress, Washington, D.C.: *Nonprint Material: Maps, Charts, and Atlases*

GERHARD MUNTHE, Director, Riksbibliotektjenesten, Oslo, Norway: *Norway, Libraries and Information Centers in: Libraries*

PETER K. MUTCHLER, Librarian, St. Albert Public Library, St. Albert, Alberta, Canada: *Ontario Library Association*

SIMON M. NEWMAN, Documentation Consultant, Washington, D.C.: *Noise*

SAM C. NWOYE, University Librarian, Nnamdi Asikiwe Library, University of Nigeria, Nsukka, Nigeria: *Nigeria, Libraries in*

DOROTHY S. OBI, Ph.D., Senior Librarian in Charge, Enugu Campus Library, University of Nigeria, Enugu, Nigeria: *Nigerian Library Association*

JACQUELINE PICCIANO, M.S.L.S., Librarian, The American Journal of Nursing Company, New York, New York; Editor, *International Nursing Index*, Kent State University, Kent, Ohio: *Nursing Libraries and Literature*

A. ROBERT ROGERS, Department of Library Science, Pahlavi University, Shiraz, Iran: *Ohio Library Association*

GEORGE SCHOYER, Librarian, Ohio State University, Columbus, Ohio: *Ohio State University Libraries*

LESTER K. SMITH, Ph.D., Associate Director, University Libraries, Northern Illinois University, Dekalb, Illinois: *Northern Illinois University Libraries*

LOUIS M. STARR, Ph.D., Director, Oral History Research Office, Butler Library, Columbia University, New York, New York: *Oral History*

ROY STOKES, Director, School of Librarianship, The University of British Columbia, Vancouver, Canada: *Omnibus Books*

LAWRENCE S. THOMPSON, Ph.D., Professor, Department of Classics, University of Kentucky, Lexington, Kentucky: *Ohio Historical Society; Oregon Historical Society*

NIGERIA, LIBRARIES IN

See also *Africa, Libraries in*

Introduction

Situated on the west coast of Africa in the Gulf of Guinea, the Federal Republic of Nigeria, with a population of over 70 million people, is the most populous country in Africa. It stretches from the swamps of the Niger Delta in the south to the fringes of the Sahara Desert in the north. It has an area of 356,669 square miles, and extends well over 700 miles from east to west and more than 650 miles from north to south (*1*).

Nigeria is an interesting study in diversity. The vegetation ranges from rain forest to semirain forest to savannah. There are more than 250 main tribal groups, each of which was probably a nation-state before the arrival of the Europeans. The following, each of which has a population of more than 1 million, are the major tribes: Hausa/Fulani (11,652,745), Yoruba (11,320,509), Ibo (9,246,388), Kanuri (2,259,091), Ibibio (2,006,489), Tiv (1,393,649), Ijaw (1,088,885), Edo (954,970) (*2*).

Against this background, Nigeria is itself a remarkable attempt at turning a "geographical expression" into a modern state. Modern Nigeria dates from 1914, when on January 1st that year Lord Lugard amalgamated the Protectorate of Northern Nigeria with the Colony and Protectorate of Southern Nigeria by proclamation. Lord Lugard thus became the first governor-general of a united Nigeria. Prior to this date, the Northern and Southern Protectorates had gone through different administrations by the Royal Niger Company, a chartered company which administered the territories.

Almost 100 years after the British occupation of Lagos in 1861 and after several constitutional reviews, Nigeria emerged as an independent Federation on October 1, 1960. There were three internal self-governing regions: Northern, Eastern, and Western. As a result of a plebiscite in the minority areas of the Western Region, the Mid-Western Region was carved out in 1963. Thus Nigeria had four component states up to January 1966, when the civilian government was ousted in a military coup. This event was followed in quick succession by others which were to have a significant and perhaps permanent impact on the Nigerian body politic and the destiny of its peoples.

On July 29, 1966, there followed a counter-coup. And almost from then, up to November 1966, there were riots in parts of the Northern region resulting in the deaths of thousands of Nigerians, most of whom were from Eastern Nigeria. About 2 million Eastern Nigerians returned to their home region. A series of constitutional

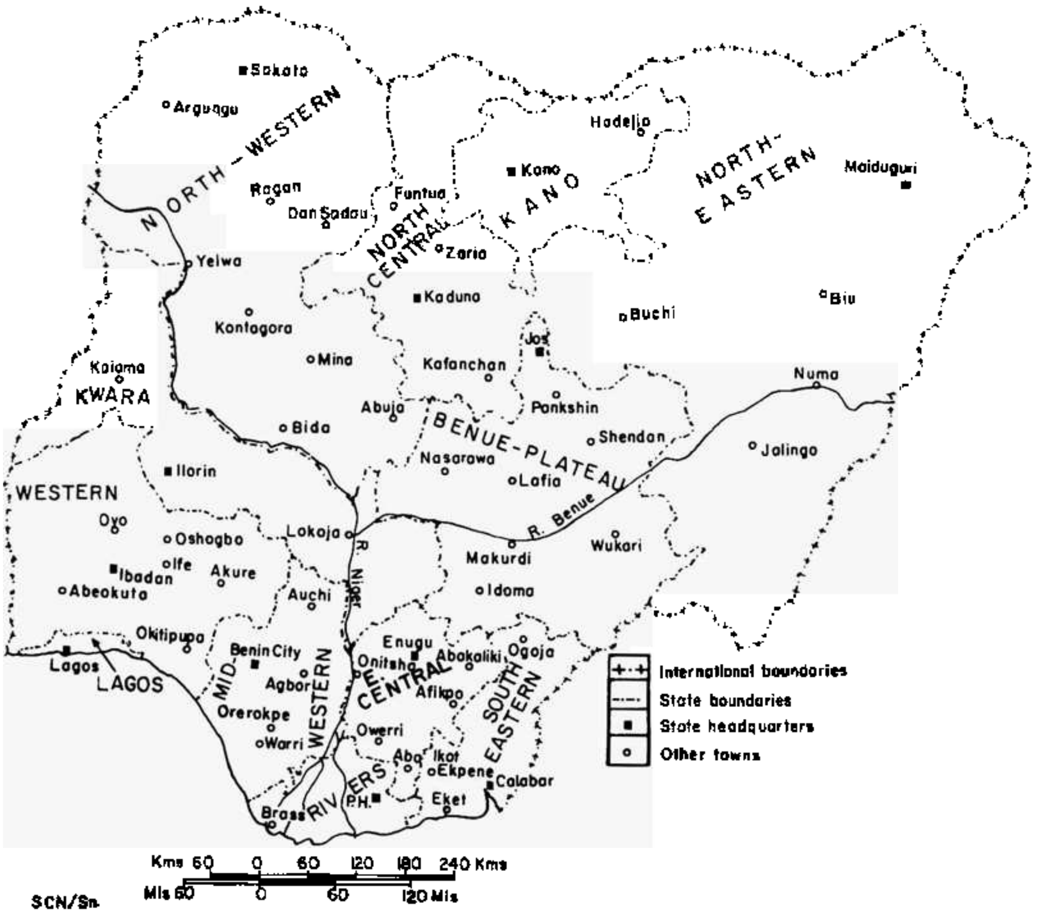


FIGURE 1. *Political map of Nigeria.*

and other disputes culminated in the proclamation of Eastern Nigeria as an independent Republic of Biafra on May 30, 1967. Prior to this event, on May 27, 1967, the Federal Government had divided Nigeria into 12 states, including three located in the newly proclaimed Republic of Biafra.

Civil war, now virtually inevitable, broke out in July 1967. For 30 months war raged within the Eastern States, as they were now called. Peace returned to the country following the symbolic surrender of Biafra on January 15, 1970, the fourth anniversary of the first military coup.

So at the moment, Nigeria is a federation of 12 states (see Figure 1). The military regime announced in 1970 its intention to hand back power to a civilian government in 1976 after carrying out a nine-point program which includes a national census, organization of new political parties, a free and fair election, and the creation of new states, or the adjustments of boundaries between existing states. This target date of 1976 has since been reviewed by the Federal Military Government and found unrealistic. The handing back of power to a civilian regime is now expected to take place at an unspecified date, but certainly sometime after 1976.

It has been necessary to go into this detail to set the political scene in Nigeria, because political developments affect the provision of libraries, whether they be public, school, or special. For example, the fact that parts of the Eastern States were at various stages theaters of the Nigerian Civil War has slowed down the pace of library development in that previously most library-conscious part of the country.

Nigeria is a predominantly agricultural country, and about 80% of the country's workforce is engaged in agriculture, or in agro-industries. The fact that Federal and State governments commit large amounts of money to promoting agricultural research and production is indication of the importance of the agricultural sector of the economy.

Since the 1960s, however, oil, which was discovered in commercial quantities in the mid-1950s, has become a very important factor in the economy, contributing nearly 80% of Nigeria's foreign exchange earnings in 1973/74. Planners are, however, worried that agricultural exports have declined steadily. In 1972, for example, export earnings for the agricultural sector dropped from N376.6 million in 1970 to N258.2 million.* However, Nigeria does have a robust and healthy economy, the visible trade surplus in 1972 amounting to N424 million (*3*), an indication that in spite of the recent civil war in the country, the economy is booming once more. Nigeria is moving gradually toward industrialization and it is hoped that the Kainji Hydro-electric Dam, commissioned in February 1969, will provide electricity to meet the increasing power needs of industry as well as ensure all-the-year-round navigation of the rivers Niger and Benue. The dam will also control seasonal flooding, thus releasing thousands of acres of fertile land for cultivation on the banks of the Niger.

Rapid progress has been made in education. In 1969 there were over 3,200,000 children enrolled in 14,832 primary schools in Nigeria (see Table 1). The Federal Military Government proposes to launch a universal primary education scheme in 1976. This means that every child of school age would be in school by that time, and the figures for some of the larger but less educationally advanced states (for example, North-Eastern) could be doubled. At the moment (i.e., 1974), there are six universities and 10 other institutions of higher education, with a total enrollment of over 22,000 students. Library services at all levels must be expanded rapidly to meet the needs of this increasing population of potential library users.

Library history in Nigeria is less than half a century old. It all began in the late 1920s, when a handful of expatriate civil servants formed the Lagos Book Club in order to have a few books circulated among themselves. By 1929, they had interested Dr. Frederick Keppel, president of the Carnegie Corporation of New York, in their venture, and in 1932 the corporation made a grant of $6,000 to the club. As a result of this grant, the Lagos Library was inaugurated in June 1932, and it took over the books belonging to the Lagos Book Club. By the end of 1933, the library had nearly 5,000 volumes, excluding scientific journals, etc. Book

* N: Naira, the currency unit used in Nigeria since January 1, 1973.

TABLE 1

Nigeria Enrollment in Primary and Secondary Schools, by State, 1969[a]

State	Population, 1963 census	Primary education: Number of schools	Primary education: Enrollment	Secondary education: Number of schools	Secondary education: Enrollment
Benue-Plateau	4,009,000	652	145,709	39	8,722
East-Central	7,228,000	3,628[b]	914,037[b]	269[b]	72,734[b]
Kano	5,775,000	241	53,580	17	4,922
Kwara	2,399,000	517	118,045	55	11,327
Lagos	1,444,000	450	231,272	68	20,711
Mid-Western	2,536,000	1,830	350,390	135	16,721
North-Central	4,098,000	505	98,037	30	7,276
North-Eastern	7,793,000	631	121,370	39	8,358
North-Western	5,734,000	452	64,291	27	5,988
Rivers	1,545,000	364	111,638	17	5,161
South-Eastern	3,623,000	1,675	310,808	52	11,080
Western	9,488,000	3,887	740,614	244	71,475
Total (Nigeria)	55,670,000	14,832	3,259,791	992	244,475

[a] Source: Nigeria. Federal Ministry of Education, *Statistics of Education in Nigeria, 1969*, Lagos, 1971.

[b] 1970, Source: Nigeria. East-Central State, *Statistical Digest, 1970*, Enugu, 1972.

boxes were sent on a regular basis to sublibraries located at Abeokuta, Apapa, Burutu, Enugu, Ife, Ilorin, Ikot-Ekpene, Port-Harcourt, Warri, and Zaria (*4*). The Lagos Library, a subscription library, was thus the first library in Nigeria to provide public service.

Today, just 40 years after the founding of the Lagos Library, the country has a National Library with branches proposed for each state capital; there are 12 state public library systems in various stages of development, six university libraries, libraries in colleges of science and technology, and a number of research institutes and government ministries.

The purpose of this article is to survey the present state of development of libraries and the profession of librarianship in Nigeria. It is organized by type of library, and there are sections on library education and bibliographical control. College and university libraries are not covered, as they are the topic of another essay in this volume. The intention is to present an overall picture of, rather than a definitive work on, libraries in Nigeria. In spite of the creation of 12 states in the country, Nigerian affairs are still more conveniently discussed from the standpoint of the old regions. For this reason library progress under each type of library will be looked at from the regional or the state level, as appropriate.

National Library of Nigeria

The Carnegie grant to the Lagos Book Club, which led to the foundation of the Lagos Library in 1932, has amazed a number of observers of the Nigerian library scene. John Harris has asserted, for example, that apart from meeting the requirements of members for light reading, the Lagos Library made no contribution to the growth of libraries in Nigeria. He could not understand why the Carnegie Corporation supported it (5). This incident, however, had the distinction of marking the beginning of a long and fruitful interest in libraries and librarianship in West Africa by the Carnegie Corporation.

Following a survey by Hans Vischer, Joint Secretary of the Advisory Committee on Education in the Colonies, and Margaret Wrong of the International Committee on Christian Literature in the Colonies, the Colonial Office made the first formal request for Carnegie assistance for library development in Africa. A grant was promptly made, and in November 1939 the Colonial Secretary notified the Governor of Nigeria of the availability of funds. The Nigerian government informed the Colonial Secretary in 1940 that the Carnegie gift was of little value as Nigerians showed interest only in reading for self-improvement through the passing of examinations. Reading materials of a broader scope were, therefore, not required. In spite of its indifference, however, the Nigerian government did appoint a Standing Committee to advise the government on provision of libraries (6).

The outbreak of the Second World War abruptly terminated the work of the committee; but by July 1945 it was able to present to the government a three-point scheme for library development in Nigeria. Among other schemes, the committee recommended the establishment of a national central library "to make into one central library, the present British Council Library in Lagos, the Lagos Library and the Henry Carr Collection" (7). The British Council Library was opened in 1943 as an information center for the British war effort. The Henry Carr Collection belonged to an outstanding Nigerian scholar and book collector who had died in 1945. In July 1948, the chairman of the standing committee set up to advise the government on the provision of libraries amplified his committee's ideas in a letter to the Chief Secretary to the Nigerian government. What the committee envisaged, he said, was a copyright deposit library which would provide facilities for learning and research along the lines of the British Museum Library and the New York State Library. The committee also recommended that the central government in Lagos be responsible for the library. This scheme was approved by the Chief Secretary to the government the same year, and it was hoped that with Colonial Office agreement, the Nigerian government would be able to put the Carnegie grant to some use by 1952.

Unfortunately, this was not to be, for in that same year, the council of ministers of Nigeria's first representative government decided that library development must be a regional responsibility, and so any prospect of a national library for Nigeria was further swept aside.

Meanwhile, the University College, Ibadan had been founded in 1948, and the Henry Carr Library—already purchased by the government as one of the libraries to form the nucleus of the National Library—was sent to its library. The University College, Ibadan Library was to take over some of the functions of a national library for many years. In April 1950, royal assent was given to a law cited as the Publications Ordinance 1950, which stipulated that two copies of every book printed in

Nigeria be deposited in the library of University College and any other place determined by the Governor in Council (*8*). The library soon undertook the publication of *Nigerian Publications*, the country's national bibliography, from 1953.

There took place in 1953 what is perhaps the most important single event in the history of libraries in Nigeria. This was the UNESCO Seminar held at Ibadan. The seminar concentrated on the provision of *public* libraries, and although national and regional library systems were recommended, no resolutions were adopted on national libraries of the type under discussion here (*9*). One of the byproducts of the Ibadan seminar, however, was the inauguration of the West African Library Association, which was formed by members from the English-speaking territories of West Africa attending the seminar. The Nigerian branch of this association and its successor—the Nigerian Library Association—were to play a significant role in the growth of the National Library of Nigeria.

In November 1955 a young Nigerian librarian Mr. Gbole Nwikina submitted a document entitled "Beginning of a National Central Reference Library Service for Nigeria" to the central government of Nigeria. He envisaged a National Library which would not be a public library, but which could provide special services, act as a clearinghouse for bibliographical information, provide training, etc. (*10*). Mr. Nwikina's document reopened the whole question of a national library for Nigeria, and in December 1958 the Nigerian Federal Government appointed a Library Advisory Committee. The committee, composed of representatives of the Federal and Regional Governments and leaders of the library profession, was to advise the governments of Nigeria on library and bibliographical policy and problems (*11*). On the recommendations of the committee, the government sought expert advice on the establishment of a national library. The Ford Foundation agreed to give assistance, and in 1961 Dr. Frank Rogers, director of the National Library of Medicine in Washington, came out to Nigeria "to consider the problem of a National Library for Nigeria, and the question of providing improved library services to elements of government in the Lagos area." Among Dr. Rogers's recommendations were:

1. The establishment of a national library in Lagos to provide adequate library services for elements of the Federal Government in Lagos and take on the wider role of a national bibliographical center.
2. The appointment of a library adviser to be charged with developing plans, drafting an enabling act, etc. (*12*).

The National Library was not to operate as a public library. In July 1961 the council of ministers approved the Rogers Report, and in March 1962 a library adviser was appointed. Dr. Carl M. White, who was before his appointment a professor at the Columbia University Library School and had just completed a term as director of the Institute of Librarianship at the University of Ankara, Turkey, arrived in Nigeria soon afterward. There was no budgetary provision, and no facilities to build on, so the whole project had to start from scratch. In the following months, special appropriations were made, and the government was soon able to provide quarters of some kind.

Two years after his first appointment, Dr. White had been able to translate the National Library of Nigeria from an idea to a reality—7,550 volumes were moved from the old secretariat library to form the basic stock of the new national library. The library had a budget of £90,000 in 1963/64, and was able to appoint staff and place orders for its own books. It also became a depository for United Nations publications *(13)*. In November 1964 the National Library of Nigeria opened its doors.

Earlier, Dr. Carl White had presented a detailed blueprint for the development of the collections and services of the National Library in his report entitled *The National Library of Nigeria: Growth of the Idea, Problems and Progress*. In a summary of what any legislation establishing the National Library ought to embody, Dr. White anticipated the following functions, among others:

1. To serve as a national bibliographic center.
2. To serve as a legal deposit and a center for the exchange of books *(14)*.

However, the National Library Act, which was passed after a long and stormy debate by the Federal Parliament in September 1964, failed to provide for the fulfillment of either the function of a national depository or the publication of a national bibliography *(15)*. For in Section 7(1) of the law, its territorial application is clearly stated as follows:

> This Act may be cited as the National Library Act, 1964 and shall apply to the Federal territory only.

This meant that Nigeria had a National Library established by law which was neither a national depository nor could publish the national bibliography. The library of the University of Ibadan continued to fulfill these functions under the provisions of the Publications Ordinance of 1950, already mentioned. This unsatisfactory situation led to a long debate within the library profession in Nigeria as to what the functions of the National Library should really be, and how these functions were to be established by law *(16)*. The profession's views were embodied in a memorandum submitted by the Nigerian Library Association to the Federal Government in 1968.

In 1970 the National Library Decree *(17)* was promulgated. Although it did not incorporate all the ideas of the Nigerian Library Association, a real attempt was made to remedy the major shortcomings of the National Library Act of 1964, with particular reference to deposit obligations and bibliographical functions. Unlike the Act of 1964, it is clearly stated that the decree applies throughout the country and has supremacy over any library edicts of state governments in the event of any conflict. Among the functions assigned to the National Library in Section 2 of the decree are the following:

1. To establish and maintain a branch of the National Library in each state of the Federation.
2. To give advice on library development or organization to any agency of the Federal Government or other state or local government agency requiring it.
3. To have responsibility for the National Bibliography and the development of bibliographical services.

Section 4 of the 1970 Decree deals with deposit privileges. Subsection 1 states that the publisher of every book in Nigeria shall, within 1 month after publication, deliver at his own expense three copies of the book to the National Library. The director of the National Library shall then make available to the librarian of the University of Ibadan one copy of the book for permanent preservation. Although this provision would appear to have retained the privileges extended to the University of Ibadan by the Publications Ordinance in 1950, the Ibadan University Library would now rely on the National Library to work out a proper machinery for the procurement of publications. Subsection 3 of this section makes special provision for government publications: 25 copies of all publications issued by or on behalf of the Federal Government and 10 copies of all publications of state governments must be deposited in the National Library.

Although the National Library Decree was viewed as at least enabling the National Library to be truly *national,* not all of its provisions appear to have been very well thought out. For example, the two deposit libraries designated in the law are within 90 miles of each other, in the western part of the country. There is no other national depository anywhere else in the country, though there are a number of regional and state deposit libraries designated by state laws (*18*). The need for more strategically located national deposit libraries is not removed by the fact that, as we have seen, the National Library is to maintain a branch in each state. None of these state branches would be a depository under the provisions of Section 4 of the National Library Decree. Perhaps, after further discussion and debate within the Nigerian Library Association, amendments to the law may be proposed. For the time being, the National Library Decree is the legislation that enables the National Library to carry out its functions.

Since it was opened in 1964, the National Library of Nigeria has been housed in temporary quarters at No. 4 Wesley Street, Lagos. The collections have grown from just under 8,000 volumes in 1964, to 60,000 volumes in 1971, not including United Nations documents (13,374), Nigerian government publications (6,040), and United Kingdom government publications (48,965) (*19*). One of the National Library's functions, that of providing a sound reference service for government officials, is based on this collection. Although small, the collection appears adequate for this purpose because of its strength in government publications. The library handles an average of well over 20,000 reference enquiries every year. In spite of limited accommodation in the present building, the library provides reading space for about 40 readers in the Reference Room. There is no direct lending to individuals.

The library continues to play a significant role in the development of libraries in government departments. Regular courses are held for library assistants from departmental libraries, and in 1968 a catalog card service to departmental libraries was introduced. Among libraries taking advantage of the service in that year was the newly created North-Eastern State Library in Maiduguri (*20*). Arising from this program, it was decided in 1970 to locate a standard catalog produced in the National Library in selected government departmental libraries as a first step toward establishing uniform cataloging practice in the country. The National Library offered to produce printed catalogs free of charge, for a maximum of 200 titles for each library taking up the offer (*21*).

Since 1965 the National Library has maintained a National Union Catalogue consisting of author entries of books cataloged in the National Library and the five participating university libraries: the University of Ibadan; University of Nigeria, Nsukka; the University of Ife; Ahmadu Bello University, Zaria; and the University of Lagos. The National Union Catalogue is available in the reference room and is meant to facilitate interlibrary loan. However, the usefulness of this tool for the purpose for which it was erected must present some real doubts. All the participating institutions had built up substantial collections before joining the scheme, and no attempt is being made to provide cards for older books so that the National Union Catalogue could become a true record of what is available in the participating libraries. There is also the problem that the University of Nigeria lost close to 60,000 volumes of its holdings during the Nigerian Civil War, and no effort has been made so far to revise the National Union Catalogue accordingly. The University of Nigeria has also not participated in the scheme since 1970, and no approach has been made to it to resume its membership. The usefulness of the National Union Catalogue has also been undermined by the state of the communications situation in Nigeria: Postal services are slow, telephone services inefficient, and there is virtually no telex system for library use. There is a claim that the National Library is sometimes able to borrow from and lend books to other libraries within a fortnight (*22*). Although this is quite possible, it must be true of a minority of cases.

The foregoing account of the functioning of the National Union Catalogue should not be allowed to give a poor impression of the leadership roles of the National Library in Nigeria. In the past few years, the library has organized a number of conferences on crucial issues affecting libraries and librarianship in Nigeria. In September 1971, a National Library Conference on State Branches was held in Lagos to work out the structure of operation and cooperation between state branches of the National Library proposed under Section 2 of the National Library Decree of 1970, and public and other library services already existing in the regions. Following UNESCO recommendations on the International Standardization of Library Statistics, a National Conference on Library Statistics was held in Lagos in August 1973, under the aegis of the National Library. The National Library has also sponsored a workshop on proposals for regulating the practice of librarianship in Nigeria, and in 1974 a working group met at the University of Ife under the National Library's auspices to examine the problems of interlibrary lending in Nigeria.

Perhaps the one area in which the National Library would be expected to play a significant role in Nigeria is the provision and coordination of bibliographical services. Section 2(2)f of the National Library Decree assigns this function to it. In Section 6 of Schedule 2 of the decree, there is specific mention of the national bibliography previously compiled and published by the library of the University of Ibadan.

> . . . in accordance with arrangements to be made between the Director (of the National Library) and the Librarian of the University of Ibadan Library (the National Library shall) assume responsibility for continuing the National Bibliography heretofore known as *Nigerian Publications*. . . .

Since June 1, 1970, the National Library has assumed responsibility for the compilation and publication of the National Bibliography.

Even before the National Library Decree, the National Library had begun to provide some bibliographic service through the publication of bibliographic aids. The most important of these are: *Serials in Print in Nigeria* (1st ed., 1967; 2nd ed., 1968); *Nigerian Books in Print, 1967–* (3rd ed., 1970); *Theses and Dissertations Accepted for Higher Degrees in Nigerian Universities 1966/67–* (4th ed., 1969/70, 1972). In addition, the library continues to produce reading lists relating to Nigeria from time to time: *Religious Literature in the Vernacular in the National Library,* 1968; *A Bibliography of Biographies and Memoirs on Nigeria,* 1968; *Nigerian Civil War,* 1972 (*23*). The library also publishes *Libraries in Nigeria, a Directory,* 1967– (3rd ed., 1971; Lagos, 1973. A new edition is in preparation).

For the first 7 years of its existence, the affairs of the National Library were directed by expatriate library advisers provided through technical assistance from the Ford Foundation of America. The foundation has remained a major benefactor of the National Library, providing funds for purchase of equipment or to improve specific services, and also for staff development.

The appointment of a Nigerian director in 1971 coincided with the maturing of earlier planning efforts designed to enable the National Library to provide a truly national library service and act as a catalyst in the development of libraries, and perhaps even spearhead the introduction of revolutionary concepts of library service in Nigeria. For these hopes to move to the realm of reality, however, the National Library of Nigeria will have to overcome one major handicap: inadequate accommodation. The Federal Government has made a provision of N1,000,000 in its current development plan for the construction of a National Library building (*24*). Construction work has not begun, and yet the government plan period comes to an end in March 1975. With the cost of building materials skyrocketing, it is expected that the Federal Military Government will augment its provision for the National Library building substantially during the next plan period, i.e., 1975–1980.

For some time to come there will continue to be discussion in library circles in Nigeria as to what the function of the National Library shall be. But as the present director put it in a progress report to the Nigerian Library Association in 1968, "The question in Nigeria is not so much what it (the National Library) should do but what it can do" (*25*).

Public Libraries

As we have seen in the section under the National Library of Nigeria, the earliest library of any consequence in Nigeria was the Lagos Library, which was a subscription library with branches in many parts of the country. We have also noted that a grant from the Carnegie Corporation for the development of libraries in the country was not taken up seriously before the end of the Second World War. The war itself was partially responsible for the birth of the public library idea in Nigeria, as public reading rooms were opened in the latter part of the war to help spread propaganda. A typical reading room contained a few seats, publications from the British Information Services, and a rediffusion box for the news from the BBC. These reading rooms were a common feature of the main towns of Northern and Western Nigeria at the time.

In Western and Northern Nigeria, the reading rooms were taken over by local government authorities and received book boxes distributed by the British Council. When the war ended, British Council and Nigerian government interest in the reading rooms waned, and these remained a shadow of what they had been until the regional governments emerged to launch proper public library services (*26*).

When consideration of the Carnegie grant was again taken up at the end of the war, it was hoped that Nigeria would have worked out a program for library development in the country by 1952. In that year, however, Nigeria's first representative government at the center held the view that the development of libraries should be the responsibility of regional governments. Eventually books worth N7,000 were purchased with the Carnegie grant for distribution to libraries in the country. By this time, apart from British Council Libraries in Lagos and the regional capitals of Ibadan, Kaduna, and Enugu, the other organized library service was provided by the Nigerian government's Public Relations Office in Lagos. The library had a stock of 20,000 volumes and operated a book-box service to the reading rooms in the provinces (*27*).

This, then, was the public library situation in Nigeria when, in 1953, UNESCO decided to hold a seminar on public libraries in Africa at the University of Ibadan. There were 29 participants at the 4-week seminar, only eight of whom were Africans. Sixteen countries from north and south of the Sahara, and France as well as the United Kingdom were represented. The seminar was organized in three groups and discussed all aspects of the problems of public library provision in Africa, including the availability of suitable reading materials for Africans, and the training of personnel.

Far-reaching recommendations were made for the consideration of governments. These included:

1. Acceptance of the UNESCO Public Libraries Manifesto as a statement of basic policy for the establishment of public library services in Africa.
2. The permanence and development of public library services to be assured by appropriate legislation.
3. UNESCO to organize a pilot project in an African territory to demonstrate public library services. (This was eventually established in Eastern Nigeria.)
4. Establishment of a limited number of library schools of a high caliber to provide full-scale professional training at leadership level as soon as circumstances permitted (*28*).

There were 17 recommendations in all.

Whatever real progress has been made in Nigeria in the provision of libraries must be traced back to the Ibadan UNESCO seminar. The seminar provided the first opportunity for librarians working in West Africa to get together, and led to the formation of the West African Library Association at the seminar. The inaugural conference of the association was held in Lagos in September 1954, and its journal *WALA News* (the first issues were titled *West African Libraries*) began publishing the same year. The formation of a professional association lent a great impetus to the pace of library development. At both the federal and state levels, the West African Library Association played a vital catalyst role, a role since assumed by the Nigerian Library Association, its successor organization.

In March 1955, a delegation of Nigerian members of the West African Library Association presented a memorandum entitled "Library Proposals for Nigeria" to the Federal Minister of Social Services. The proposals included the following prerequisites for library development in Nigeria:

1. The establishment of a Library Advisory and Consultative Committee.
2. The necessity of an enabling legislation for the provision of libraries in the regions, and for the establishment of a Federal Library Authority.
3. Federal responsibility for training of high-level manpower, including the provision of a library school.
4. Bibliographical services.
5. Reference and research services.
6. Book preservation and binding.
7. Book selection (*29*).

In 1955 John Harris summarized the library situation thus:

> At the Federal level there is no library system, no library legislation, and no trained librarian, except in the Federal Information Service, and its functions remain obscure. Of the three regions the North has an established library service but no legislation, the East has legislation but no service. While the West has neither (*30*).

But the country has come a long way in 20 years. In 1960, all libraries in Nigeria (there were 10, including public, university, college, and research) had between them 31 professionally qualified staff, a total bookstock of 379,300 volumes, and an expenditure of N301,954 (*31*). These figures are interesting when compared with the situation of public libraries today. (See Figure 2 and Table 2.)

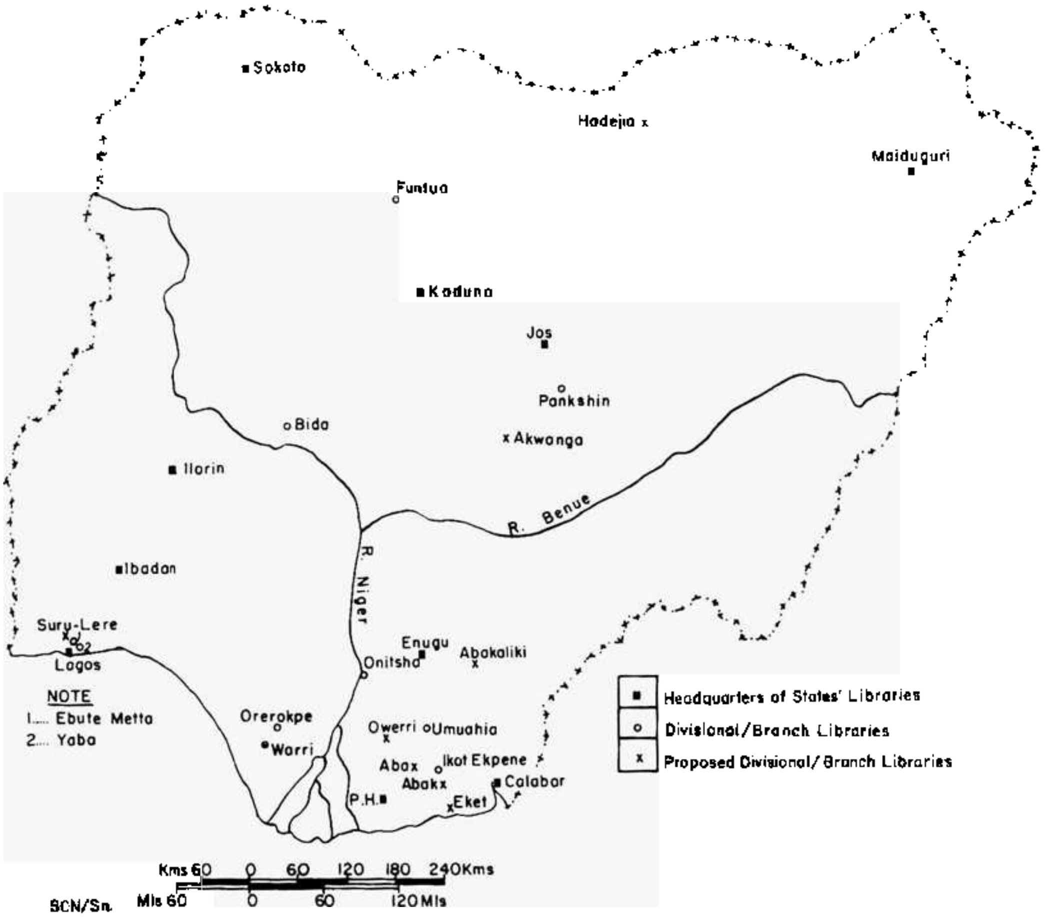


FIGURE 2. *Nigerian public library development, 1972.*

PUBLIC LIBRARIES IN LAGOS STATE

The only public library services at present available in Lagos State are located within the city. The state of Lagos, which was created in May 1967 by incorporating the city of Lagos with the colony province of Western Nigeria, does not as yet run a state library service. The state government has, however, allocated the sum of N195,000 for the development of libraries in the four divisions of the new state, and plans for the establishment of a state library board are under consideration (*32*).

The most important library service in Lagos is the Lagos City Council Library Service. It was opened in August 1946, as the Lagos Public Library, and was jointly managed by the British Council and the Lagos Town Council. The Town Council took over complete management of the service in April 1950 and renamed it the Lagos Municipal Library in August 1952. By 1954 the library was made up of a central library on Lagos Island and a small branch at Yaba (opened 1948) on the mainland. It had a stock of just over 7,000 volumes and two professional staff, both of them Nigerians. It also had the distinction of running the first children's service in West Africa (*33*).

TABLE 2
Nigeria: Stock, Staff, and Expenditure in the National Library of Nigeria and Selected State Libraries[a]

Library	Year founded	Branches	Total stock	Date	Estimated expenditure, N	Date	Professional staff	Date
National Library of Nigeria	1964	(Proposed) 12	128,379	1971	232,000	1971/72	20	1972
Lagos City Library	1946	3	88,317	1973	69,000	1971/72	5	1972
Western State Library	1956	1	82,088	1972	39,378	1971/72	4	1972
Mid-Western State Library	1971	1	36,200	1974	182,850	1972/73	12	1974
Kano State Library	1969	—	38,213	1974	27,250[b]	1973/74	3	1974
East-Central State Library	1955	3	59,316	1973	202,800	1972/73	15	1973
South-Eastern State Library	1969	1	35,820	1974	26,720	1971/72	7	1974
Total			468,333		779,998		66	

[a] Source: (a) *Libraries in Nigeria; a Directory, 1971;* (b) *Annual Reports;* (c) communications from the various libraries.
[b] Excluding personal emoluments.

The Yaba Branch of the library was run on a part-time basis until 1962 when a full branch with a new building was opened. In 1963 the City Council asked Dr. Irving Lieberman of the School of Librarianship, University of Washington, Seattle, then visiting director at the Institute of Librarianship, Ibadan, to conduct a survey of the city's library needs. Among Dr. Lieberman's many recommendations were: the establishment of 10 new branches by 1974 and the construction of a new central library (*34*). The Lieberman Report, submitted to the City Council in 1964, became its blueprint for library development.

The deadline recommended by Lieberman for the establishment of 10 new branches and the opening of a new central library has been reached at the time of writing. The City Council has not met these development targets, but a new branch was opened in Ebute Metta in 1965, and a new, fully air-conditioned Central Library was opened in 1966. The system had a stock of 88,317 in 1973, distributed as follows: Central Library, 62,727; Yaba Branch, 6,980; Ebute Metta, 18,610. The library maintains a special collection of Lagociana, and there is a gramophone record lending service at the Central Library. The Lagos City Library also runs a school library service to five council primary schools in different parts of the city. Among proposals for future development are the establishment of a branch at Surulere and the introduction of a mobile library service to outlying areas of the city such as Apapa and Victoria Island (*35*).

In 1972 the Lagos City Library Service was chosen as Nigeria's subject for a proposed research project of the International Association of Metropolitan City Libraries (INTAMEL). The purpose of the project is

> to find out by means of surveys and case studies, the present form and extent of public library facilities, with a view to evaluating the adequacy, effectiveness as well as prospects for development and expansion of public libraries consonant with the pace of overall national development (*36*).

The survey was due to have begun in mid-1973, and is expected to be completed in time for the INTAMEL Conference scheduled to be held in Accra and Lagos in 1975. The City of Lagos is fortunate to have its library services so critically evaluated two times in a decade.

There are two other "public" library services located within the city of Lagos worth discussing here. These are the British Council Library and the American Library.

The British Council began a library service in Lagos in 1943 and cooperated with the Lagos Town Council to run the Lagos Public Library from 1946 to 1950. It founded its own library service in Lagos in 1951. Since then, branches have been established in five other towns in the country: Ibadan, Kaduna, Enugu, Kano, and Benin City.

Initially, the British Council Libraries were intended to provide a full public library service, but with the establishment of public library services in various parts of the country, the aim of the service has become somewhat modified. Children's sections were discontinued, and provision of textbooks for students preparing for examinations became the main area of concentration (*37*). The council has continued to assist the development of libraries in the country through financial and technical aid. Among them, the six British Council Libraries in Nigeria have a stock of over 100,000 volumes and employed eight professional staff in 1971 (*38*). The council is thinking even now of modifying its service concept further in those areas of the country with well-developed library services, so as to complement rather than duplicate existing services.

The American Library in Lagos was founded in 1946 and provides reference and loans services to a clientele of 10,000 adult users in the city.

PUBLIC LIBRARY SERVICES IN THE WESTERN STATE

As we have seen, public library services in the Western State originated in the World War II reading rooms, which were taken over by local government authorities at the end of the war. A proper public library service was not established until 1956, when the state library service was founded. It was part of the regional Ministry of Education and was not established by law. It therefore lacked a corporate controlling authority, and the rate of growth of its services and collections has been, to say the least, slow.

With the proposed establishment of a Library Board by edict and the completion of a Central Library in Ibadan in 1974, there should be an improvement in the situation. This building, estimated to cost N100,000 when completed, was begun in 1972. The British Council contributed N54,000 toward the cost of construction. The library had a total bookstock of 82,088 in 1972, and 88 periodicals were currently received. The annual book vote (appropriation) stood at a paltry

N2,600, however (*39*). The library is a depository for all publications from the state, under the Western Nigeria Publications Law of 1959.

In spite of its difficulties, the Western State Library has continued to provide a reasonably good reference and loan service to users in the state capital of Ibadan. Control of the excellent Secretariat Reference Library in the Military Governor's Office has been vested in it. The library has also made an attempt to supervise and advise on the development of the 40 or more local government libraries in the state. These local libraries range in size from 1,000 to over 3,000 volumes. A professional librarian has been appointed to take charge of this service, and training courses for assistants in charge of local government libraries are held from time to time.

The state library also runs a mobile library service to schools, and it is hoped that this service will be improved in the future through the availability of more bookmobiles.

There are plans for four divisional libraries to be sited in the educational zones of the state. It is hoped that when a library board is eventually set up, full responsibility for the professional direction of local government libraries will be assumed by the state library. When this happens, the state should have one of the best networks of public library services in the country.

PUBLIC LIBRARIES IN THE MID-WESTERN STATE

The areas now known as the Mid-Western State of Nigeria were, until 1963, the Benin and Delta Provinces of the Western State of Nigeria. As a result of a long agitation by the minority tribes in these parts, the Mid-Western State was carved out of Western Nigeria. Although it is the oldest of the new states in the country, the Mid-Western State has as many difficulties as any of the newer states created by decree in May 1967. There is a tendency for the new states to inherit problems left by the administrations of the regions of which they were once a part. As we have just seen, Western Nigeria still does not have a library law.

At the time it was created 11 years ago, the only public library service available in Mid-Western Nigeria, as it was then called, was the Library of the Benin Divisional Council, which in many ways resembled a typical local government library in Western Nigeria. Soon afterward, a British Council Library was established, also in Benin City. Whatever plans the new state may have had for the establishment of a library service must have been interrupted by the outbreak of the Nigerian Civil War in 1967.

However, even as the war raged, the Military Government of the Mid-Western State took a decision in August 1969 to establish a state library. At the end of the civil war, John and Priscilla Harris, respectively former librarian of the University of Ibadan and former library adviser to the Federal Government of Nigeria, were requested to carry out a survey of the library needs of the state. The Harris report, entitled *A Library Service for the Mid-Western State of Nigeria*, was submitted to the government in April 1970. Following this report, an edict establishing the Mid-

Western State Library Board was published in February 1971 *(40)*. The Mid-Western State thus became the second state in Nigeria to have a public library service controlled by a board established by law.

Under the edict, the board is empowered:

1. To establish and maintain a state library service.
2. To provide services expected of libraries of the highest standard.
3. To take over responsibility for all existing state and local council libraries, including those in ministries.
4. To encourage the establishment of libraries in the state and to make available to institutions in the state the widest range of books and other records of intellectual behavior.
5. To operate the following services, among others:
   (a) A central reference library
   (b) A school library division
   (c) A public library division *(41)*.

Section 13 of the edict designates the Mid-West Library as a depository for all publications emanating from the state. Publishers are required to deposit four copies of all publications, one of which is automatically sent to the library of the University of Ibadan.

Mrs. Priscilla Harris was appointed the first director of the library in October 1970, and 2½ years later the Central Library was opened in Benin, in April 1973. The Central Library is housed in temporary quarters in Benin City, and has an adult section of 23,000 volumes and a junior section of 6,200 volumes. A branch was opened at Orerokpe in Western Urhobo Division in May 1974. The branch has an adult lending section of 5,000 volumes and a junior section of 2,000 volumes *(42)*. A mobile library service was launched in June 1974, partly with a grant of N10,000 from the British Council.

The Mid-West State Library has also established a unique service to schools. Under the scheme, the state library acts as a central book purchasing agency for schools. A Mid-West Book Depot was opened in May 1972, to fulfill this need. Principals and school librarians visit the depot to select books required in their libraries. Each school has an account with the depot, which also sells books to the general public *(43)*.

The Mid-West State Library now has a professional staff of 12.

PUBLIC LIBRARY SERVICES IN THE NORTHERN STATES

The only library service available in Northern Nigeria before the Second World War was a subscription lending library run by the Church Missionary Society from Lagos. As a result of the decision of the central government that the development of libraries be the responsibility of regional governments, Northern Nigeria's share of the Carnegie grant for the development of libraries in Nigeria was used mainly for the purchase of books *(44)*.

In 1952 Miss Joan Parkes, who was originally employed by the Western Nigeria government to organize its Native Authority Libraries, was invited by the Northern Nigerian government to set up a regional library service. A service with headquarters in Kaduna was soon established. The Regional Library Service inaugurated a book-box service to Native Authority reading rooms, advised on the development of their collections and services, and assisted by reimbursing Native Authorities 50% of expenditure on reading room staff salaries. Regular courses of training were also organized in Kaduna for reading room attendants. In spite of the efforts of the Regional Library Service, the Native Authority reading rooms failed to provide library service of any consequence. It was soon discovered that because of the low level of literacy, some of the books sent through the book-box scheme were unsuitable for the public served by reading rooms. Indeed, in some cases, the reading room attendants declined to unpack the book boxes for fear of loss of their contents (*45*). The only success of the Regional Library was the Kaduna Lending Library, which by 1956 had a stock of 27,000 volumes and a readership of nearly 4,000.

In 1962 the government took advantage of the Commonwealth Technical Assistance Programme to secure the services of Mr. F. A. Sharr, librarian of the State of Western Australia (where he had established a successful regional library service), to survey libraries in the region. Western Australia had a lot in common with Northern Nigeria: both territories consisted of vast areas of discontinuous population with very poor communication. In his report entitled *The Library Needs of Northern Nigeria,* Mr. Sharr recommended the following policies for the development of libraries in the region:

1. A partnership between the Regional Government and the Native Authorities in two phases:
   (a) Government to establish a model library in each of the 13 provincial headquarters. Native Authorities will provide buildings while the government will be responsible for the supply of books and staff.
   (b) Government to supply bookstock to any Native Authority outside the Provincial Headquarters, justifying this need by way of an educated population, provided that an approved building was available.
2. A library school to be established at Ahmadu Bello University for the training of staff at a lower (certificate) level and the degree level.
3. Development of school libraries.

The recommendations took into consideration the needs of a vast region, and the fact that reading needs of backward areas and the newly literate would continue to be met by the Native Authority reading rooms (*46*). The Sharr Report was accepted by the government in 1964, as the basis for the development of library services. Before the government's acceptance of the report, however, a Regional Reference Library had been opened in Kaduna in 1963, and there was already a branch of the Regional Library Service in Bida with a stock of 10,000 volumes.

As part of the implementation of the Sharr Report, provincial libraries were set up in Bornu and Sokoto, and a Library Board was proposed. To help in further implementing the Sharr proposals, the services of a library adviser were requested through British Technical Assistance in 1967. Before the arrival of the expert, however, the decree splitting the former Northern Region into six separate states had been promulgated. A Northern States' Interim Common Services Agency was set up, and it directed that all movable assets be shared among the six new states. The Regional Library was thus destroyed: A professional librarian was posted to each state; and books, shelves, and furniture were shared, without consideration for the location of related works or the availability of facilities such as buildings, etc. (*47*).

Problems were soon to arise; and these included lack of staff and accommodation, the fact that the governments of the new states were unprepared for the setting up of library services, etc. Today, however, library service of some kind is available in the new states, as can be seen from the following state-by-state review. Indeed, it can be safely said that the state governments have achieved more than the former regional governments could have achieved in the time since they were created.

BENUE-PLATEAU STATE

The state library service is under the library division of the State Ministry of Information. It received 10,000 volumes as its share of the former Regional Library in Kaduna. The Headquarters Library in temporary accommodation in Jos houses more than 25,000 volumes and has a readership of over 3,000.

The state librarian has submitted a document—*The Organisation of a State Public Library*—for the consideration of the government. It is hoped that this will form the basis for public library development in the state. The government allocated the sum of N180,000 for the construction of modern branch libraries in each of the six divisional headquarters in the state in its 1970–1974 development plan. One of these, the Pankshin Divisional Library, has been completed. The British Council is expected to make funds available for the beginning of a mobile library service to remote areas.

KANO STATE

The Kano State Library was opened in 1969 as part of the Ministry of Information. The library's readership is made up mainly of students at all levels; but the information needs of business, the professions, and government, as well as the leisure reading needs of the general public are served. There is no enabling legislation, and no library board, but a Kano State Library Service Committee was established in March 1972 to formulate library policies and advise the librarian on their implementation (*48*).

As of March 1974, the State Library had a bookstock of 38,213 volumes. The readership numbered 8,358, more than half of whom were children. The library assists in the development of school libraries by recruiting and posting its own assistants to selected secondary schools in the state. A qualified librarian undertakes regular tours of inspection of school libraries. At the moment, the library's service is limited to metropolitan Kano, but a book-box service to Hadeija is run every 3 months (*49*). Vast areas of the state are, therefore, without library service of any quality.

In 1972 the state librarian submitted recommendations for library development in the state to the government. These recommendations envisaged:

1. A regional library service with headquarters in metropolitan Kano, and branches in all administrative headquarters.
2. A reading room in every district or village where there is sufficient literacy to warrant it. The reading rooms will be run by local councils in accordance with standards set by the state library, which will in turn provide subventions for staff, furniture, and equipment.
3. The provision of a mobile library service which will operate from the branches.
4. The establishment of a library in every postprimary institution, to be manned by a library assistant under the supervision of a teacher librarian.

It is hoped that these proposals can be implemented in the 1975–1980 plan period.

KWARA STATE

The state's share of the assets of the old Northern Regional Service—a professional librarian, four library clerks, and an assortment of equipment and furniture—has been located in the state capital Ilorin as the nucleus of a state library service.

A new state library service headquarters building is planned for Ilorin.

NORTH-CENTRAL STATE

The North-Central State Library is the most fortunate of the new state library services. It had the good fortune of acquiring the headquarters building of the Northern Regional Library, which was completed just before the new states were created. It also inherited the Kaduna Reference Library, completed in 1963 and unaffected by the decision to divide the resources of the Northern Regional Library among the new states. The North-Central State Library was thus able to provide a good service to the residents of the capital territory of Kaduna from the start.

The library's budget for the 1971/72 financial year stood at N30,000, and plans for a branch library at Funtua, 97 miles from Kaduna, have reached an advanced stage (*50*).

NORTH-EASTERN STATE

The North-Eastern State library service was organized around the Bornu Provincial Library, which was started in 1965 as part of the implementation of the Sharr Report. A new building for the headquarters of the state library has been completed in Maiduguri. An active program of assistance to school libraries, involving regular courses for library assistants and visits of inspection by staff of the state library, has been launched.

NORTH-WESTERN STATE

The only full branch of the Northern Regional Library Service was located in Bida in the southern part of the new North-Western State. In 1964, as part of the implementation of the Sharr Report, the Sokoto Provincial Library was opened in Sokoto, capital of the new state. The Bida Branch Library had a stock of over 10,000 volumes at the time of the creation of new states and, together with the Sokoto Provincial Library, formed the nucleus of the North-Western State library service, with headquarters in Sokoto.

PUBLIC LIBRARIES IN EASTERN NIGERIA

With regard to the development of public libraries, the government of Eastern Nigeria in the 1950s seemed to have done everything right. First, the most experienced Nigerian public librarian, and at the time librarian of the Lagos Municipal Library, Kalu Okorie was asked to make a library survey of the region. Second, a Library Board Law was passed, following closely on the Gold Coast Library Board Ordinance of 1949, which had proved quite successful. Mr. Okorie carried out his survey in March and April 1955, a law was passed soon afterward, and then Mr. Okorie found himself charged with the responsibility of carrying out his own proposals. The Eastern Regional Library Board held its first meeting in November 1955, and in May 1956 its first service was opened in a prefabricated building as a reference service only. Bookstock was based initially on 20,000 volumes, mainly gifts from the United States (*51*).

Mr. Okorie's proposals for a regional library service had envisaged the following developments:

1. Divisional libraries based on each of the five divisional headquarters.
2. Mobile libraries operating either from the Regional Library headquarters or from the divisional libraries.
3. A book-box service from the regional headquarters to the more remote areas of the region.
4. A postal service for the benefit of those who could not be reached by any of the above services (*52*).

This scheme of service and the government's determination to implement it impressed UNESCO. Following negotiations, it was decided to site UNESCO's third public library pilot project in Enugu. It will be recalled that at the UNESCO Seminar on the Development of Public Libraries in Africa held in Ibadan in 1953, it was decided that UNESCO should sponsor a pilot project in an African territory to demonstrate public library development.

The agreement which was reached in 1957 provided briefly:

1. That the government of Eastern Nigeria allocate a minimum of £12,500 (i.e., N25,000) per annum for a period of 5 years, and erect a building from which a public library service could be operated.
2. UNESCO was to provide an expert for a period of 12 months, and financial and other assistance for the 5 years of the duration of the agreement (*53*).

Following this agreement, a mobile library service provided by UNESCO was launched in Enugu in May 1958. In July the same year, the foundation stone for the building of the Regional Central Library, already under consideration before the UNESCO agreement, was laid. The New Regional Central Library was officially opened in March 1959.

At the end of the period of the agreement between the Eastern Nigeria Government and UNESCO, Mr. Stanley Horrocks, Borough Librarian of Reading and the UNESCO expert originally appointed in 1957, carried out an assessment of the service (*54*). The assessment was considered by the Regional Seminar on the Development of Public Libraries in Africa held in Enugu in 1962. The 1962 seminar was intended as a follow-up to the Ibadan seminar of 1953. It provided an opportunity for a review of progress made since 1953 and also of seeing the UNESCO pilot project in Enugu.

With the completion of the headquarters of the service, the implementation of its development program made rapid progress. Two more vans were added to the mobile library service by 1960. The first of the Divisional Libraries was opened in Port Harcourt in 1962, a second Divisional Library located at Ikot-Ekpene was opened in 1964, and a third was commissioned in Umuahia in 1965. The last of the Divisional Libraries, Onitsha, was opened in January 1966. As with the Regional Central Library, each of the Divisional Libraries operated a mobile library service. As a first step toward incorporating local council reading rooms into the regional library service, agreement was reached with the Calabar Urban County Council, and its reading room became the service's first branch library in 1964. A film on the library's services, *The Written Word,* was made jointly by UNESCO and the Regional Ministry of Information. The board's Seventh Annual Report for the period 1963–1965 aptly reflects the stage of the development of its services in the title, *Consolidation and the Future.*

There was not to be a future, however, for the period of crisis and war in Nigeria began a year after the seventh annual report. This period of crisis and war was to lead eventually to the board's demise. On the eve of the civil war in Nigeria in 1967, the Eastern Nigeria Library Board had over 156,000 volumes in its system of divisional and branch libraries. All the libraries in the system were located in theaters of war. The Divisional Libraries in Ikot-Ekpene and Onitsha suffered very extensive damage. Damage to the libraries at Port-Harcourt and Umuahia was less severe, and the Central Library at Enugu came out of the war almost unscathed.

As we saw in the introductory paragraphs, the area known as Eastern Nigeria was proclaimed an independent Republic of Biafra in May 1967, following the creation of 12 states in Nigeria, three of which were located within the borders of Eastern Nigeria. As a result of the creation of states in the country, there are now three state library services in the former Eastern Region of Nigeria. The Central Library in Enugu and the Divisional Libraries at Umuahia and Onitsha are located in the East-Central State, while the Port-Harcourt and Ikot-Ekpene Divisional Libraries are located in the Rivers and South-Eastern States, respectively.

EAST-CENTRAL STATE

In spite of the very hard condition prevailing inside the state of Biafra during the Nigerian Civil War, some kind of library service remained in existence. The Biafra Library Board, as the Eastern Nigeria Library Board was renamed, continued to provide service from each of its Divisional Libraries until the town in which it was located was abandoned to the Federal forces. The reference section of the Onitsha Divisional Library provided the basic stock for one of the interesting library experiments of the civil war—the library of the Biafran Directorate for Propaganda (*55*).

The library situation in the East-Central State at the end of the war in January 1970 was briefly as follows: most of the libraries created during the war were destroyed; the Divisional libraries at Onitsha and Umuahia needed reconstruction, Onitsha more so; the Central Library in Enugu suffered minimal damage; the two libraries of the University of Nigeria in Nsukka and Enugu lost upwards of 60,000 volumes, and although buildings were almost unaffected, library furniture and equipment (except steel shelving) were nonexistent (*56*).

It was against this background that the staff of East-Central origin from the Eastern Nigeria Library Board set out to try to establish a library service in the state. The stock in the Central Library at Enugu was 23,000 volumes, and by mid-1971 both children's and adult services were operating. In August 1971, an edict establishing the East-Central State Library was promulgated (*57*) and in September of the same year the board was appointed. One of the first tasks of the board was to discuss the development plan for libraries prepared in 1970. The plan proposed:

1. Reconstruction and development of existing libraries (Enugu, Umuahia, Onitsha, Owerri, and Aba).
2. The completion of Abakiliki Divisional Library and the Enugu pilot library project.
3. The upgrading of two existing branch libraries in Owerri and Aba to divisional libraries.
4. Establishment of six branch/rural libraries.

These proposals were estimated to cost about N700,000 (*58*).

Reconstruction of the Divisional Libraries at Umuahia and Onitsha proceeded apace and they were reopened for service in June 1973. Each Divisional Library had a bookstock of just under 10,000 volumes on reopening. Although only two of the board's fleet of mobile library vans survived the war, and in poor state of repair, there are proposals to reactivate the mobile library service to operate from both the Central Library and the Divisional Libraries. As of September 1974, an order was placed overseas for five brand-new bookmobiles and their delivery was expected by the end of the year.

Bookstock in the board's system on March 31, 1973 stood at 59,316 volumes, and issues to adults totaled 53,993. Issues in the children's library for the same period were 42,991. In February 1973, a Research and Training Division was established to take care of the board's continuing staff training program and occasional training requirements of government departments. The board spent N202,900 on its services in the 1972/73 financial year (*59*). There were plans in the financial year ending March 31, 1974 to complete the Enugu branch library pilot project, to be located at Uwani in a growing part of the capital city, as well as to complete the building for the Abakiliki Divisional Library. In spite of the ravages and setbacks of the war, the East-Central State Library Board is well on its way to providing, once more, the best public library service in the country.

RIVERS STATE

The state library service inherited the Port-Harcourt Divisional Library of the former Eastern Nigeria Library Board; the deputy director, the chief cataloger, and two other librarians also joined the state library from the old board.

The Port-Harcourt Library is being expanded to serve as the administrative headquarters of a state library service which it is hoped will soon be established by law and be controlled by a library board. There are proposals for a fleet of mobile and "book-boat" libraries to serve the rural and remote areas of the state. A branch of the service will also be located in each of the administrative headquarters of the state. In 1971/72, the state government allocated N50,000 for the state library service, exclusive of personal emoluments. As of 1972, the service had a clientele of over 2,000, and the bookstock stood at just under 17,000 volumes (*60*).

SOUTH-EASTERN STATE

The oldest library in the South-Eastern State was the Calabar Urban Council's reading room, founded in 1945 following a gift from an enthusiastic British district officer. This library was eventually taken over by the Eastern Nigeria Library Board and administered by it as a branch library from 1964. The Eastern Nigeria Library Board also had a Divisional Library located at Ikot-Ekpene at the northwestern tip of the state. One would have expected that following the creation of the South-Eastern State in 1967, these two libraries (Calabar had a stock of 5,000 volumes; Ikot-Ekpene, 10,000) would have been a convenient nucleus for a state public library service. Unfortunately, at the time the South-Eastern state library service was inaugurated in 1969 there were only 3,000 and 500 volumes in Calabar and Ikot-Ekpene, respectively.

The former chief librarian of the Lagos City Library was appointed state librarian in 1969, and a service was operated from the Calabar Library beginning late that year. By the end of 1972, the bookstock of the Calabar library, now the State Central Library and headquarters of the service, stood at nearly 20,000 volumes. The Ikot-Ekpene Divisional Library was reopened in February 1973, with nearly 9,000 volumes. Each of these libraries has an active children's library. Two divisional reading rooms were also opened in Eket and Abak during 1973 (*61*).

The following are some of the proposals for the development of public library services in the state:

1. Establishment of a mobile library service (seven coaches are already on order and the service should be launched by the end of 1974).
2. The opening of Divisional Libraries in each of the 14 administrative headquarters in the state. It is expected that each of these libraries will have a bookstock of 25,000 volumes and seat 150 readers.
3. The building of a Central Library in Calabar to act as headquarters to the service as well as provide a ranking public library service for the state capital. Building is already in progress.

The service has maintained a very active staff training program and has also helped to train staff of libraries in government departments (*62*).

In November 1973, an edict establishing the State Library Board was passed. The law empowers the board to: "establish, equip and maintain" the state library and extend services to any other institutions it might deem fit; to establish and maintain mobile and Divisional Libraries; and to formulate and determine policies for library development in the state. Section 11(i) of the edict also designates the state library as a depository for all publications from the state. It has retroactive effect from August 1, 1973 (*63*).

We have seen from Table 2 that, compared with 20 years ago, libraries have come a very long way in Nigeria. In spite of this, there are still problems. Not least of these is the low literacy rate in some of the educationally backward states. It is not surprising that in these states the government has made a reasonably high-level rate of literacy one of the conditions for government support to local authorities for library development. As of now, only three of the state library systems, namely East-Central, Mid-Western and South-Eastern, are established by law and governed by a state library board. Although the state library board comes under a government ministry, it has the status of a public corporation and a fairly free hand to run its own affairs. Three more library boards are proposed for the Western, Rivers, and Lagos States. There is no doubt that enabling legislation is vital to the successful operation of public library systems. The most successful states have been those with a high literacy rate and public library systems established by law and governed by a corporate body which is not a regular civil service department.

The UNESCO Public Library pilot project located in Eastern Nigeria was designed as a model for other parts of the continent of Africa to follow. The project appears to have had the desired effect on the new states in Eastern Nigeria, and on the Mid-Western State. In other parts of Nigeria, the experiment has had little visible impact, and one wonders if, overall, the pilot project has really generated public library interest in Nigeria, to say nothing of Africa.

School Libraries

By the time Nigeria gained independence in 1960, school libraries were in an indifferent state of development. The few libraries available in secondary schools were in a handful of government-owned secondary schools and a few of the older voluntary agency institutions. Today, with governments taking an increasing interest in the control of schools, the situation is changing, only because there is greater awareness of the importance of libraries in schools, and not because real change has, in fact, taken place. Although the library profession in Nigeria has shown an interest in school libraries, it cannot be said to have done for school libraries what it managed to do for the National Library of Nigeria. As early as 1960, Mrs. W. Page, librarian of the Lagos Teacher Training College, called for the formation of a school libraries section of the West Africa Library Association (WALA) (*64*). There is no school libraries section of the Nigerian Library Association, which succeeded WALA in Nigeria. The only active association of school libraries is the East-Central State School Libraries Association, founded in 1971 as successor to the Eastern Nigeria School Libraries Association which was inaugurated in 1963.

Despite its apparent indifference, WALA drew up a memorandum on school libraries in 1961 for the consideration of governments and education authorities. The memorandum stressed the need for libraries to be established in all secondary schools and urged that such libraries be supervised by trained librarians (*65*). By this time, however, the Federal Government had established a school library in Lagos with the advice of a UNESCO expert. The library aims at providing basic reference and lending libraries in the Lagos area, supplementing these as need be; establishing a mobile library service for schools in remote areas; providing a good reference service at a central education library for education officers, teachers, teachers-in-training, and students in the upper classes of secondary schools; and advising on the establishment of school libraries and the development of a library syllabus in schools. In June 1964 a 5-year agreement was reached between the Federal Government and UNESCO for the Federal School Library Service to become the UNESCO Pilot Project for school libraries in Africa (*66*). The service has been taken over by the government of Lagos State, which has voted nearly N200,000 for its expansion and improvement.

The above remains the only conscious effort on the part of government to encourage the development of libraries in primary and postprimary schools. In 1966, however, the government of the former Eastern Region of Nigeria appointed a librarian to its inspectorate service to oversee school libraries and advise schools on their establishment and development. This librarian has since 1970 assumed the same role in the service of the East-Central State. Although most governments have allocated various sums for development of school libraries in the plan period ended in 1974 (*67*), the only real service, professional advice, and direction available to schools in this area will continue to come from state library services, all of which are concerned about development of libraries in schools. The Mid-West State Library is playing the most active role in this direction with the establishment of the Mid-West Book Depot. The East-Central State Library Board is actively developing plans for the creation of a bookshop which will serve schools, among other clients.

The closest thing to a school libraries "movement" began in Eastern Nigeria when the Eastern Nigeria School Libraries Association (ENSLA) was formed as a section of the Eastern Division of the Nigerian Library Association in May 1963. This association constituted a major pressure group for school libraries in Eastern Nigeria, and was something of a mass movement before the outbreak of hostilities in Nigeria in 1967. By the eve of the civil war, the association had a membership of 225 postprimary institutions and published a journal, the *ENSLA Bulletin*. It had presented a *Minimum Standards for School Libraries* which was accepted by the Ministry of Education, organized courses for teacher–librarians, and published its *Manual for School Libraries on Small Budgets*. This manual has since been reprinted by the East-Central State School Libraries Association, which succeeded ENSLA (*68*).

The East-Central State School Libraries Association (ECSLA) was inaugurated in 1971, and since then has revised the *Minimum Standards for School Libraries* and persuaded the State School Board to approve an annual allocation of N200 for books to each postprimary institution in the state. The association began publishing the *ECSLA Bulletin* in 1972, and regular meetings of local branches, organized around the education zones, are held. Courses have been held annually since 1972, for teacher–librarians or library assistants nominated by schools.

One area where some progress has been achieved on a national scale is in the training of teacher–librarians. The advanced teachers' colleges established in the early 1960s introduced library science as options in their programs. These courses ensured a regular flow of qualified teachers with interest and some training in elementary librarianship. In 1965 the librarian of the University of Nigeria, with the support of the Faculty of Education, introduced a 3-credit course in school librarianship. The course, a terminal one, is a third-year elective. The enrollment for the course has risen from 14 in 1965 to nearly 80 in 1974. Its effect has been the same as the librarianship options in the advanced teachers' colleges. This means that Harold Bonny's call in the 1960s for courses leading to certification in school librarianship is still only half-answered (*69*). The University of Nigeria is proposing a library school which is expected to produce, among other types of librarians, graduate librarians whose services will be geared to school library work.

As they were in the 1960s, school libraries in Nigeria are still in a state of flux. A few things must be done and done quickly if there is to be a change in the situation. First, the Nigerian Library Association must take a greater interest in school libraries. This may be made manifest by the formation of a strong School Libraries Section. Perhaps the East-Central State School Libraries Association could form the basis for this new section. The School Libraries Section of the association will draw up well-thought-out policies for the consideration of governments. The present arrangement whereby state libraries, ministries of education, school boards, etc., get involved is ineffective and inadequate. Therefore, whatever proposals are presented will have to include one on the controlling authority for school libraries. There is no doubt that governments realize and accept the importance of school libraries, and official recognition for the certification of school librarians and, therefore, their status should not be a problem. When the universal free primary education scheme proposed by the Federal Government is introduced, the country could make a dramatic leap forward in education, and the present figure of just over 3 million children in primary schools could be more than doubled. If adequate library services are available in primary and postprimary institutions all over the land, then the country would be set on the road to a major social revolution that would have tremendous effect on its entire fabric.

Special Libraries

Of special libraries in Nigeria in the 1960s, John Harris has said that they were "in a state of becoming rather than being" (*70*). When Harris wrote in 1962, he estimated the entire stock of university and special libraries in the country at 320,000 volumes. Among them, they employed 35 professional staff. Fifteen of the libraries he discussed were special libraries. The picture is very different today, for there are certainly more professional staff in special libraries than in all the libraries discussed at the time (see Table 3).

TABLE 3

Nigeria: Special Libraries by Subject, Stock, Staff, and Expenditure, 1972[a]

Subject	No. of libraries	Stock	Professional staff	Expenditure, N[b]
Agriculture and allied subjects	8	53,110 (five libraries)	13 (six libraries)	66,000 (three libraries)
Business and industry	8	44,079	12	31,326 (four libraries)
Current affairs	4	36,000	6	10,616 (three libraries)
Law (excluding law libraries in universities)	7	31,000	6 (six libraries)	57,326 (four libraries)
Medicine (excluding medical libraries in universities)	1	20,000	1	Not available
Other subjects	2	6,000	2	7,100
Total	30	190,189	39	172,368

[a] Sources: (a) *Libraries in Nigeria; a Directory, 1971*, Lagos, 1973; (b) F. A. Ogunsheye, *Nigerian Library Resources in Science & Technology*, Ibadan, 1970; (c) *Annual Reports* of Research Institutions.

[b] Does not include staff emoluments in some cases.

In spite of this apparent sign of progress, special libraries in Nigeria are still a long way from matching the progress of, say, university libraries. Traditionally, special library development in most parts of the world tends to lag behind development in other types of libraries. Yet special libraries, because they back research that could lead to new products and processes, could play a vital role in the development and industrialization process in any country. The only special libraries of any consequence in Nigeria today are libraries of "research," all of which are in government departments or in government-owned or sponsored institutions. There are no private commercial or business libraries of consequence, nor are there any in industrial establishments. Government-sponsored research in Nigeria is concentrated on agriculture because of the importance attached to that sector of the economy, and there is, therefore, a predominance of research institutes involved in agriculture-oriented research. There are also a few libraries within government ministries and departments whose functions demand the availability of current information to its staff.

Perhaps because the establishment of special libraries is determined by needs rather than a desire to provide an amenity, there is no "history" of special libraries in Nigeria. And in spite of an impassioned plea from one of the country's pioneer special librarians in 1966 for special librarians to get organized (*71*), neither a special libraries association nor a special libraries section of the Nigerian Library Association exists.

The survey that follows is organized by subject. Under each broad subject area there will be a brief account, where appropriate, of the development of libraries in the area. This will be followed by a listing of specific libraries with figures of stock, etc.

AGRICULTURAL LIBRARIES

Cocoa Research Institute of Nigeria

Founded in 1964, the Cocoa Research Institute of Nigeria was originally a branch of the West Africa Cocoa Research Institute (WACRI), with headquarters at Tafo, Ghana. WACRI had a good library and information service, but all that was available at the Nigerian branch were a few books, etc., for the field workers. The institute now has its headquarters at Idi-Ayunre, near Ibadan. Although a library was established at the beginning, the staff list as of March 31, 1968 showed that the institute had no professional librarian (*72*). The library serves just over 100 clients consisting of research officers and technical officers at the headquarters and the branches. The library handles the distribution of the institute's publications and is now manned by one professional librarian.

Federal Department of Agricultural Research, Ibadan

This research institute, the oldest of its kind in Nigeria, was established in 1899 as a model farm. It became a research station in 1910 and was named Moor

Plantation, after Sir Ralph Moor, the British High Commissioner who had taken interest in pioneer agricultural research in the country. The institute has branches as follows: The Federal Rice Research Station in Badeggi, North-Western State; and the Root Crops Research Unit at Umudike, near Umuahia in the East-Central State (*73*). The library maintains collections at each of these branches. The holdings of books and periodicals stood at 10,528 volumes in 1972, and the budget was N31,780. There were 387 users and 23 staff members, four of whom were professionals.

Federal Department of Forest Research, Ibadan

This department came into being in 1941 and currently has a branch at Zaria, the Savanna Research Station. The budget for its library in 1971/72 was N5,044, and bookstock stood at 17,821 volumes. There were 98 periodicals on current subscription, and one of a staff of four was a professional librarian.

Institute for Agricultural Research, Ahmadu Bello University, Zaria

Originally established in 1925 as the Samaru Research Station of the Northern Nigeria Ministry of Agriculture, the institute became part of Ahmadu Bello University in October 1962. Between 1925 and 1955, the library was run by various research officers. A full-time librarian was appointed in 1956 (*74*). The library is classified by the Universal Decimal Classification and provides what is, perhaps, the best agricultural information service available in Nigeria. Although it has been part of the Ahmadu Bello University for more than 10 years, the institute continues to be semiautonomous. The institute has three branch research stations, the most important of which is located at Mokwa in the North-Western State. The Mokwa Station has a fairly substantial collection of books.

The library's holdings are as follows: books, 10,551; pamphlets, 1,150; bound volumes of periodicals, 8,000. There are 747 current periodicals. The library publishes a *Weekly List of Principal Journals Received in the Library*, a monthly *Accessions List*, and an annual *List of Current Periodicals*. The budget for 1971/72 was N30,780. There are eight staff members, two of whom are professionals.

Federal Department of Veterinary Research, Vom

Located in Vom, some 16 miles from Jos, capital of Benue-Plateau State, the Veterinary Research Station was established in 1924. Aside from its main function of carrying out research in the main areas of veterinary medicine and animal husbandry, the station supports a laboratory technologists' training scheme. A veterinary school offering a 2-year course in animal husbandry also comes under the umbrella of the department. A branch of the Nigerian Institute of Trypanosomiasis Research is located close-by. The clientele is made up of research officers, technologists, instructors in the two training programs, and students.

Although it operates on a rather small budget (books/periodicals, N1,000; and salaries, N2,440 in 1972), the library provides an excellent service, publishing its own *Current Contents* of periodicals received in the library and a regular index to research in progress or completed in the department. In 1972 the stock stood at 10,882 and there were two professionals out of a staff of six.

Nigerian Institute for Oil Palm Research, Benin

This institute came into being in 1952 as the West African Institute for Oil Palm Research. It was established by law and renamed the Nigerian Institute for Oil Palm Research in 1964. There is a substation at Abak in the South-Eastern State. The library was established to provide the needs for research officers and others for information on the palm tree. It was without a librarian at its inception; but an expatriate librarian was appointed in 1961, and she resigned in 1964. The Nigerian who was undergoing training abroad returned to Nigeria just before the period of crisis in the country. The institute was affected by the fighting during the Nigerian Civil War, but has made a remarkable recovery. Bookstock stands at nearly 4,000 volumes, and 187 periodicals are currently received.

Nigerian Institute for Trypanosomiasis Research, Kaduna

This research institute maintains small collections at both its headquarters in Kaduna and at the Vom branch. In either case, the collection is a laboratory collection mainly and is looked after by one of the research officers.

International Institute of Tropical Agriculture, Ibadan

The International Institute of Tropical Agriculture is sponsored principally from funds made available by the Ford Foundation, the Rockefeller Foundation, and the aid agencies of the governments of the United States and Canada. The institute's building programs began in 1968, but actual research started in 1969, the year the library and documentation center was also founded.

The library and documentation center is expected to acquire and maintain literature relevant to the work of the institute, disseminate information to staff and trainees as required, and develop current and retrospective bibliographies on subjects important to the institute's research programs. In 1971 the library published a union list of scientific and technical periodicals in six agricultural and four university libraries and the National Library of Nigeria. At the end of 1973, the stock stood at 16,000 volumes of books and periodicals and 2,000 pamphlets and reprints. The library received 782 periodicals and annuals (*75*). Three professional librarians are currently serving the institute. The library has built up its French-language material to the extent that it now has the largest collection of French agricultural literature in Anglophone Africa. The scope of the *Union List of Scientific and Technical Periodicals in Nigerian Libraries* was revised in 1973 to cover 18 major libraries. In 1972 the library published *Serials for Rice Research*.

BUSINESS AND INDUSTRIAL LIBRARIES

The inadequacy of library services in this area has been attributed to the state of business and industrial enterprise in Nigeria. It is pointed out, for example, that as recently as 1965, 65% of all investment in the country was foreign-owned. These enterprises already had their own information services back home at their metropolitan headquarters, and it was uneconomical to establish new ones overseas. Nigerian businessmen do not normally place much premium on research for information and are, therefore, not very anxious to discover and utilize information (*76*). There is also the fact that a library in a business or industrial establishment represents a fairly heavy investment which will affect the overhead charges of running the business. Moreover, establishing a special library of this kind presupposes that there is an earnest intention to put information to an important use in discovering new techniques or manufacturing new products.

There are very few Nigerian businesses needing to use information in the manner just described. The few who do find existing information services, all of them provided by government departments, corporations, or the National Library, rather adequate. Most state libraries also go out of their way to try to meet the needs of business communities. Some businesses have introduced technical information services consisting of a few bookcases in the managing director's office. The days of the private business library are yet to come.

Central Bank of Nigeria Research Library, Lagos

The Central Bank of Nigeria was established in 1961 to fulfill all the functions of a national bank. The library is part of the bank's Research Department, under the control of the director of research. It was founded with the advice of the librarian of the Reserve Bank of New York. Although there are branches of the bank in every state capital, library services are centralized.

The library's stock exceeds 12,000 volumes, and there are special collections of newspaper clippings. An index to current periodicals received in the library is published as part of the library's accessions bulletin. In 1972, four of its 19 members of staff were professional librarians and the bank spent N15,246 on the library, exclusive of personal emoluments.

Federal Institute of Industrial Research Library, Lagos

The Federal Institute of Industrial Research was founded in 1955 to promote the setting up of industries based on the country's raw material. It investigates the suitability of Nigerian raw materials for use in proven industrial processes and modifies such processes to suit local conditions. The services of the institute are available free to industrialists and others. Research at the institute is organized into the following divisions: Food, Industrial Chemistry, Process Engineering, Production Engineering, and Industrial Analysis. Research is currently going on in the Food Division on the possibility of producing vinegar from local palm wine.

The library of the institute plays a key role in its functions by providing the researchers with a reliable information service. The library has over 5,000 volumes of books and bound periodicals. In 1972 there were 89 periodicals on current subscription, and the book vote was N1,900. One documentalist and a librarian are in the employ of the institute. The library is the distributor for publications of the institute.

Geological Survey of Nigeria Library, Kaduna

Although the Geological Survey department has been in existence since 1919, and apparently books and periodicals were acquired from that time, a separate library was not set up until 1930. The library is under the Director of Geological Survey, and its clientele consists almost entirely of staff of the department.

The library is particularly strong in the area of maps of Nigeria, of which it has well over 3,000. The total stock as of March 1972 was 11,994. Of this number, about 2,000 represented books, the rest being pamphlets, maps, etc. The information officer is a qualified geologist and a trained librarian.

Library of the Federal Ministry of Economic Development and Reconstruction, Lagos

This library was established in 1962. Expenditure as of March 1972 was N4,680, while total stock stood at about 10,000 volumes. The library of the National Manpower Board is administered as a branch of the library. There are three staff members, one of whom is a professional librarian.

Library of the Ministry of Economic Development and Reconstruction, Enugu

This library serves mainly staff of government departments, but businessmen sponsored by the ministry are allowed to use its facilities. The library is particularly strong in government publications of the former Eastern Region of Nigeria, and 175 current serials are received. The librarian in charge is assisted by three non-professional staff.

Nigerian Standards Organisation Library

The Nigerian Standards Organisation was established by decree in December 1971; but the effective date of the decree is January 1970, when the organization began functioning. A library was established soon afterward. It collects standards from various parts of the world, and the librarian recently had some experience in the library of the British Standards Institution. A technical information service is expected to be introduced in the near future.

Technical Information Library, Federal Ministry of Trade, Lagos

This is one of the few libraries with a clientele mainly from the business community. It also serves civil servants of the Ministry of Trade and other government departments. With an estimated readership of 1,600, it must be the most intensively used special library in the country. The library publishes a quarterly *Accessions List* and occasional lists of feasibility reports and trade periodicals available in the library. Holdings as of March 1972 were: books, 3,079; current periodicals, 100. There is a special collection of publications from UNCTAD and GATT. The library has a staff of seven, including one professional.

Projects Development Agency, Enugu

This agency was founded in the East-Central State after the war, probably in an attempt to harness some of the talents discovered in various Biafran Research and Production Units during the Nigerian Civil War. Its interests are varied, but its functions could be likened to those of the Federal Institute of Industrial Research in Lagos. Although the bookstock is a mere 1,000 volumes, and there only are 35 current periodicals received, the agency has taken the fine step of employing a qualified librarian to build its library from the start.

CURRENT AFFAIRS LIBRARIES

Houses of Parliament Library, Lagos

Although Nigeria has not had an elected federal legislature since 1966, the Army said at the time it came to power that year that it would eventually hand power back to democratically elected representatives of the people. The library has remained in its former location in the House of Representatives in Lagos, and retained its name. Until its 500 or so legislators return, the library is used largely by civil servants and others. The library's total stock has reached some 12,000 volumes. It is run by a qualified librarian and five nonprofessional staff. The book budget for 1971/72 was N2,616.

Ministry of External Affairs Library, Lagos

The services of the library are available to staff of the ministry, sponsored students from home and abroad, and staff of foreign missions in Nigeria. Stock figures for 1972 were: 3,000 volumes and 125 current periodicals. The library has a special collection of publications of the Organization of African Unity from the time it was founded in 1963. There are also holdings of all Nigerian treaties in force from October 1, 1960, and all films of major events in Nigeria since independence. The library has a book budget of about N4,000. There are six staff members, one of them a professional.

Nigerian Institute of International Affairs Library, Lagos

The Nigerian Institute of International Affairs was founded in 1963 as an independent, nonprofitmaking organization to promote the study of international affairs through research, lectures, seminars, and exchange of information with similar institutes elsewhere in the world. It is governed by a council, appointed by the Head of the Federal Government, and is supported financially by grants from the Federal and state governments. Financial assistance has also come from foreign governments and foundations, especially the Ford Foundation. The Ford Foundation grant is intended mainly for the support of research staff and library services (77).

Since 1967 the institute has been housed in a new building, one area of which has been designed to be the library. It is estimated that the library will ultimately hold 100,000 volumes and seat over 50 readers. The library's holdings in mid-1974 were: books, 20,000 volumes; periodicals, 700 titles; vertical file clippings, 30,000; pamphlets, 5,350; and microfilms, 850 reels. The library also has a special collection of documents of the United Nations Economic Commission for Africa. The library has three professional members of staff.

Use of the library is available to all members of the institute, and other adults on payment of a membership fee of N16.80.

Ministry of Home Affairs and Information Library, Enugu

Like the Projects Development Agency, this library could be regarded as a direct consequence of the Nigerian Civil War. It was set up in 1970, probably by staff of the erstwhile Biafran Directorate for Propaganda, who had come to realize the usefulness of current and readily accessible information in their work. The library has a staff complement of three, one of them a professional librarian. The bookstock is a little below 1,000 volumes, and 93 serials are currently received. In spite of its modest bookvote (N1,000), the library manages to serve more than 1,000 readers, mostly civil servants. There are special collections of newspapers and official photographs, probably the best of their kind in the East-Central State.

LAW LIBRARIES

In general, law libraries in Nigeria are well stocked and fairly adequately funded. Apart from the libraries in the high courts of the 12 states, there are the supreme court library in the Federal capital of Lagos and very good law collections at the Institute of Administration of Ahmadu Bello University and the libraries of the Universities of Ife, Lagos, and the University of Nigeria. The major problem affecting the law libraries is lack of professional staff, particularly those possessing substantive legal qualifications.

The outstanding court library is The Supreme Court Library, which has ranking collections, including rare books and manuscripts. It is served by two professional staff. The High Court Library of Lagos State, which was founded in 1900, is the leading law library in the country. Its collections amount to well over 20,000 volumes, and its budget for 1971/72 was a generous N15,000 for books, N7,000 for law reports, and N3,000 for maintenance. The library has a staff of three, all of professional rank.

MEDICAL LIBRARIES

The oldest medical research library in Nigeria was founded in 1945 at the Medical Research Institute in Lagos. The institute had been established almost 40 years earlier, in 1909. In 1946 the library of the Medical Research Institute was merged with the Department of Health Headquarters Library to form the Central Medical Library (*78*). The library's stock exceeded 20,000 volumes in 1972, and there were 304 serials on standing order. The bookvote was N2,800. The librarian is the only professional out of a staff total of 12. The library's service is available to staff of the Federal Ministry of Health and the Federal Laboratory Service, as well as to others in medicine and allied professions.

In 1948 the University College, Ibadan admitted its first students, among them medical students. Although the university library built up its medical collections to a high standard (*79*), it was not until 1963 that a medical sublibrary was established at the University College Hospital. Even then, it was only a service point, and only emerged as a full sublibrary in 1966. The medical library now has more than 26,000 volumes and provides seating for 66 readers in its present accommodation. A separate medical library is being built (*80*).

Fourteen years after the establishment of the University College medical school, a second medical school was founded at the University of Lagos in 1962. Four other universities soon followed: Nsukka in 1966, Ahmadu Bello in 1968, Benin in 1971, and Ife in 1972. Of these schools, Ibadan and Lagos have by far the best medical library facility at present, the latter having over 10,000 volumes and a staff of 27, five of them professionals. The other libraries are fledgling, but Nsukka has a medical librarian and a rapidly growing medical collection which is soon to move from one wing in the faculty building to a separate accommodation in the teaching hospital. Each of the universities has also established a school of nursing with a small special collection.

OTHER SPECIAL LIBRARIES

Nigerian Museum Library, Lagos

Founded in 1957 as the library of the Department of Antiquities—it is located in the Nigerian Museum in Lagos and has a bookstock of a little over 3,000 volumes. The only staff member is a professional librarian.

Federal Ministry of Establishment Library, Lagos

This is the library of the Federal Civil Service. Established in 1963, it now serves well over 1,000 readers. In 1971/72, its budget amounted to N5,740, excluding salaries. A qualified librarian is in charge.

Library Education

The earliest program of library education in British West Africa was established at Achimota College in the Gold Coast in 1944, but Nigerians did not participate in it until 1948, when a group was sent to the Gold Coast for a 6-month course. The first Nigerians to qualify as librarians by obtaining the Associateship of the British Library Association began by going through this short course and eventually proceeding to the United Kingdom to attend full-time courses. In 1950 a course for Native Authority librarians was held at the University College, Ibadan Library. Such short courses and intensive in-service training programs have remained a unique aspect of the whole process of education for the profession of librarianship in Nigeria.

As in every other area of librarianship in the country, real progress in library education in Nigeria dates from the UNESCO Seminar held at Ibadan in 1953. One of the 17 recommendations of the seminar was the establishment of a limited number of library schools to train leaders for the profession in Africa. This recommendation was based on a report from Group III of the seminar, which stated inter alia that "the basic objective is full-scale library training in this continent" (*81*). The group also felt that any library schools established on the continent should require university graduation or equivalent qualification for admission to training programs.

In 1955 the West Africa Library Association, which was formed at the Ibadan seminar, adopted the following resolution at its annual conference:

> That this conference, conscious of the need for increasing professional training facilities in West Africa, urges the Council of the Association to set up a standing committee on training to:
> (a) explore the possibility of establishing a library training centre for West Africa and
> (b) assist, in whatever ways it can, those librarians now engaged in the formal training of junior librarians (*82*).

The conference also adopted another resolution calling on the council of the association to investigate the possibility of obtaining funds from the Carnegie Corporation of New York, for the establishment of a number of scholarships for deserving library assistants from the Gold Coast and Nigeria to undertake further training in British and American library schools.

In response to a request from the Council of WALA, the Carnegie Corporation asked Dr. Harold Lancour of the University of Illinois Graduate Library School to carry out a survey of library conditions in West Africa to enable it to give due consideration to the request. Lancour came out to West Africa late in 1957, and after a few months on the spot, submitted a report to the Carnegie Corporation. He was of the view that methods of recruitment and training then obtaining were inadequate, and urged the corporation to support the establishment of a library school "in an institution of higher education with the resources, personnel, and prestige to develop a high-quality professional training agency" (*83*). He also recommended that such an agency be in a university-level institution.

Although the idea of having an indigenous library school was welcomed by WALA, there was disagreement among its members as to whether it was wise to have it located in a university, and whether, in fact, training should be at the graduate level as recommended by Lancour. A great debate ensued, which was to go on long after WALA was dissolved. The question was whether the time was ripe to produce *leaders* for the library profession in West Africa when there were still very few *workers*. However, the Carnegie Corporation accepted Dr. Lancour's recommendation and his suggestion that the proposed library school be based at the University College, Ibadan.

IBADAN LIBRARY SCHOOL

The Carnegie Corporation made a grant of $88,000 for the establishment of a library school attached to the library of the University College, Ibadan, in 1959. Courses began in the 1960/61 academic session with an enrollment of six students. From 1960/61 to 1962/63, the school prepared students for the Registration Examination of the British Library Association for the qualification of the Associateship of the Library Association, ALA. The Institute of Librarianship, as the school was then called, was meanwhile working out a curriculum which in its opinion would be more suited to Nigerian conditions. Also during these early years, Mr. John Harris, then librarian of the University College, continued to act as director of the institute while several members of the library staff lectured or worked there part time.

Following the approval of the new program of the institute by the Senate of the University of Ibadan, the Diploma in Librarianship course was introduced in 1963/64, with an intake of 23 students, eight of them nongraduates. The institute continued to admit nongraduates "to keep faith with the many able people who had entered library work before the importance of a degree had been recognized" (*84*). Fewer and fewer nongraduates were admitted to the course, and by 1967, Senate approved a proposal that, in future, only university graduates would be eligible for admission to the diploma course.

With the introduction of the Ibadan diploma in the 1963/64 session, the Carnegie Corporation made a further grant of $113,000 to the institute, which was now able to employ three full-time staff. Two of these were transferred from the university library, and one of them—Mrs. F. Adetowun Ogunsheye—eventually became professor and head of the school in the 1972/73 session. The first full-time director, Mr. John Dean, was appointed in 1965, and he held the position until 1970. The institute ceased to be connected with the university library with the appointment of a full-time director, and was incorporated into the Faculty of Education. During the 1970/71 academic year, it was redesignated the Department of Library Studies. Carnegie Corporation assistance to the Ibadan Library School continued until 1968, by which time a total of $284,000 had been made available (*85*). The University of Ibadan took over full responsibility for the school from that year.

Realizing that library development in the country was proceeding at a quick pace and that there was need for well-trained subprofessionals in all types of libraries, the Ibadan school designed a separate program for nongraduates. The course began in the 1970/71 session and was initially for 1 year, leading to a certificate in library studies. It was soon realized that, perhaps, a 1-year course was insufficient and, since 1972/73, a 2-year diploma program has been in existence. From 1967, the 1-year course for graduate students has been called the postgraduate diploma in librarianship. Since that time, the Ibadan school has designed and offered courses for the Master of Library Science as well as programs for the Ph.D.

Apart from courses for degrees and diplomas, the Department of Library Studies at Ibadan organizes workshops and seminars for practicing librarians. The department has also sponsored the Abadina School Library Project, both as a workshop for its students and to encourage the development of school libraries. The project is located in the Abadina School, which is attended mainly by children of the university's staff. The department is developing plans for the establishment of an international documentation center on African librarianship, and consultancy services for library development in the states (*86*). To mark the 10th anniversary of the introduction of the diploma course, the Library School sponsored a colloquium on library education in Nigeria, in March 1974. The colloquium provided an opportunity for the Library School to carry out an appraisal of its services to various types of libraries through evaluations submitted by the library profession.

Despite the Library School's achievements, there has often been sharp disagreement within the Nigerian Library Association as to whether, in fact, the Ibadan school is serving the profession in Nigeria well. To begin with, the association has had no hand in the development of the school's programs; and having no certification of its own, there has been pretty little the association can do to influence the school's course content. Although, as we saw earlier, "many able people who entered library work before the importance of a degree was recognised" were admitted to the first Ibadan diploma courses, even the University of Ibadan library would not grant full professional status to such apparently qualified librarians. The result was that many nongraduate holders of the Ibadan Diploma from 1964 to 1967 went on to complete examinations for registration as Associates of the British Library Association, a qualification whose quality appeared more widely accepted. The following quotation from an address of the president of the Nigerian

Library Association to the annual conference in Zaria in 1965 serves to illustrate the attitude of the discerning employer to the first Ibadan Diploma holders:

> I would like to make a particular plea to the Ibadan Institute of Librarianship. I think the present course is far too short, lacking in depth and quite inadequate for the needs of Nigeria. . . . The single greatest need in any library is for accuracy and the only member of staff I have yet been able to send to Ibadan was more accurate before he went to the Institute than when he emerged from it (*87*).

AHMADU BELLO UNIVERSITY LIBRARY SCHOOL

When he surveyed the situation of libraries in Northern Nigeria in 1963, one of the recommendations of Mr. F. R. Sharr was the establishment of a library school at the Ahmadu Bello University to train librarians at two levels: certificate and degree (*88*). The Kashim Ibrahim library, the central library of the Ahmadu Bello University, had had a tradition of regular and intensive in-service training for its own staff, and the position of staff training officer existed from the founding of the university library in 1962. The staff training officer was engaged full time on this task and was assisted by other professional staff as the need arose. This was an entirely internal scheme designed to train staff for the efficient performance of their duties and, where possible, to take the external examinations of the British Library Association. Few Northern Nigerians attended the Ibadan Library School, the majority preferring to study in Britain (*89*).

In 1968, all was set for the library school recommended by Sharr, and the Department of Library Science of Ahmadu Bello University was born. It was established in the Faculty of Education and from the beginning set out to produce librarians at two levels: a 3-year bachelor's degree in library science (B.L.S.) for candidates holding university entrance qualifications; and a 2-year diploma in librarianship for candidates holding lower qualifications. The first head of the new department was Mr. J. M. Grey-Theriot, who had been appointed staff training officer in the Kashim Ibrahim Library in 1965. Professor Grey-Theriot subsequently became university librarian and held that post, along with the headship of the Department of Library Science, until the 1972/73 session.

Although the department was established mainly to meet the requirements of Northern Nigeria, it is interesting that its B.L.S. program has attracted a good number of candidates from the southern states of the country (*90*). The holder of an Ahmadu Bello University B.L.S. is somewhat disadvantaged in competition for jobs, especially in university libraries. His qualification represents the equivalent of 4 years of university education devoted to librarianship and other courses. The holder of an Ibadan postgraduate diploma or the M.L.S. of a North American library school has 4 years of university education in one subject *plus* 1 year's study in librarianship.

The Ahmadu Bello University Department of Library Science has also designed a postgraduate Master of Library Science program, the scheme of work for which is outlined on an individual basis. Candidates with the department's B.L.S. and those holding honors degrees in other subjects are eligible for admission.

So Nigeria has two library schools, each of which has a different system of primary certification. In addition, Nigerians obtain library qualifications from the United Kingdom and North America. A third library school is proposed for the University of Nigeria, Nsukka. Like the other two, the Nsukka school will be a department in the Faculty of Education. Its programs are still being planned, but certain it is that its diplomas and degrees will be awarded at the postgraduate level.

Although no published documentation is presently available, the University of Benin is known to be planning the establishment of its own library school, of a type different from the existing or proposed schools in the country. Indications are that the Benin school will aim at producing library technicians in the main, for deployment in the massive school and public library programs now under way in the Mid-West State.

As the first full-time director of the Ibadan Library School pointed out, the profusion of qualifications arising from the fact that Nigerians have been exposed to varying educational systems over a short period must create its own problems. He has himself suggested that while a university degree is regarded as the minimum qualification for admission to the profession, care must be taken to properly safeguard the interest of those already admitted by virtue of the possession of qualifications of the British Library Association, or the Ibadan diploma *(91)*. There is a clear need for a specification of what qualification or qualifications Nigerian librarians should possess.

The Nigerian Library Association has tried to tackle this problem, and has discussed a draft of a decree which, when promulgated, should control the practice of librarianship in the country. The provisions of the decree will include the institution of an agency for the registration of librarians in the country. Presumably, acceptable qualifications for registration will be spelled out in this part of the decree.

Bibliographic Services

There is a general dearth of adequate bibliographic services on the African continent outside South Africa. Of such services as there are, the majority are foreign-based. This situation is attributable to the lack, in most African countries, of the complex of facilities and devices which are a prerequisite for national bibliographic control and service—facilities and devices such as legal deposit law, current and retrospective national bibliographies, special subject and specialized bibliographies, a complete list of serials, indexes to periodical literature, a national bibliographic center, a union catalog of books, and a union catalog of serials *(92)*, etc., etc.

Nigeria took the first step toward the establishment of national bibliographic services with the enactment of a legal deposit law in 1950. The Publications Ordinance, 1950 stipulated that two copies of all books published in Nigeria be deposited with the library of the University College, Ibadan. In 1953, that library published the first issue of the Nigerian national bibliography, *Nigerian Publica-*

tions, 1950–1952. The Ibadan library was to continue to fulfill the bibliographic functions of a national library until 1970, even though the National Library of Nigeria had been established by law in 1964. The reason was, of course, that the National Library Act of 1964 was limited territorially to the Federal Territory of Lagos.

Meanwhile, publications laws were passed in Eastern and Western Nigeria in 1955 and 1957, respectively, but each of these retained the deposit privileges of Ibadan. However, the Northern Nigeria Publications Law of 1964 repealed the 1950 Publications Ordinance and, for the University of Ibadan library, substituted the library of the Ahmadu Bello University. In 1963 the Federal Parliament amended the Publications Ordinance, 1950 and curiously enough substituted Federal Territory of Lagos for Nigeria, and University of Lagos library for University of Ibadan library. The creation of new states in Nigeria in 1967 added to an already confused situation. Thus, between 1965 and 1970, Ibadan was fulfilling a national library function by compiling and publishing the national bibliography, without legally sanctioned access to publications from all parts of the country (*93*). The situation was remedied by the National Library Decree of 1970, which, aside from having supremacy over state publications laws, named the National Library and the University of Ibadan library as depositories. With the promulgation of the National Library Decree, the function of maintaining *Nigerian Publications* passed on to the National Library of Nigeria. Subsequent state library laws, especially those of the East-Central, Mid-West, and South-Eastern States have preserved the deposit privileges of the University of Ibadan library (*94*).

Although it is doubtful whether it included more than a portion of Nigeria's publications output, *Nigerian Publications* was a true current national bibliography of Nigeria, listing materials published within Nigeria and including, a few years later, publications on Nigeria or by Nigerians published abroad. It appeared annually at first, but later was to appear weekly, with quarterly and annual cumulations. There was also the annual listing of new periodicals which was intended to update *Nigerian Periodicals and Newspapers, 1950–1955.* A revised edition, *Nigerian Periodicals and Newspapers, 1950–1970* was published to coincide with the transfer of *Nigerian Publications* to the National Library.

We have discussed the bibliographic activities of the National Library of Nigeria. At the University of Ibadan, apart from *Nigerian Publications,* Mr. John Harris, the first university librarian, compiled *Books about Nigeria,* first published in 1959, with a fifth edition appearing in 1969. *Books about Nigeria* has been for many years the most useful and readily available reading list on Nigeria. It lists the most essential books on the history, the economy, description and travel, politics and education, etc., of the country. The Ibadan University library also launched a bibliographical series in 1970 with the publication of E. A. Ekpiken's *A Bibliography of the Efik-Ibibio Speaking Peoples of South-Eastern Nigeria.* A second number, J. A. Ombu's *Niger Delta Studies* has also been published. In 1966 the University of Nigeria library launched its own bibliographic series, its aim being to "pay special attention to bibliographical documentation of Africa south of the

Sahara." The first number in the series, A. O. Ike's *Economic Development of Nigeria, 1950–1964, a Bibliography*, published in June 1966, was also the last number. The Nigerian political crisis in 1966 and the civil war that followed it in 1967 had become too unsettling for normal bibliographic work. After the civil war, the Nsukka bibliographic series was resuscitated, but as a collaborative venture with an overseas publishing house and under a new name: NOK African Bibliographic Series. This series is expected to be launched during the latter half of 1974 with the publication of J. C. Anafulu's *Igbo-Speaking Peoples of Southern Nigeria, a Bibliography*. The second number in the series, C. E. Enu's *Nigerian Art and Antiquity, an Annotated Bibliography of Writings from the Earliest Times to 1973*, is in press and scheduled for publication in time for the Second World Black and African Festival of Arts and Culture, to be held in Lagos in January 1977.

Conclusion

Nigeria is a large country and the most populous in Africa. Thanks to petroleum, she is well on the way to becoming a rich country. In library terms, Nigeria has made reasonable progress during the past quarter century and is ahead of many of the new states in Africa, south of the Sahara. But much remains to be done.

Nigerian governments need to invest far more in public and school libraries than they are doing at the present time. Experience in Nigeria has shown that public libraries backed by legislation and run by semi-independent library boards achieve the best results. Therefore, state governments which have not done so should launch their public libraries through the enactment of enabling edicts and the appointment of library boards. The country can do with several more library schools during the coming decades. Nigerian libraries should begin to apply new techniques such as mechanization and automation for a more rational exploitation of their resources. The implementation of the universal primary education plan effective from 1976 will signal the beginning of a social and educational revolution in the country. Nigerian libraries must be prepared to meet the challenges of this revolution and participate actively in it.

REFERENCES

1. *Nigeria Handbook 1973*, Federal Ministry of Information, Lagos, 1973, p. 9.
2. These figures are based on the 1963 census. The provisional figures for the 1973 census give Nigeria a total population of 79.76 million. When exact figures of population are given in this article, reference is to the 1963 census.
3. Nigeria. *Economic and Statistical Review 1972*, Central Planning Office, Federal Ministry of Economic Development and Reconstruction, Lagos, 1973, pp. 5–7.
4. Alan Burns, Foreword to the *Rule Book of the Lagos Library, 1958;* quoted by Irving Lieberman, *A Survey of the Lagos City Library; Complete Report*, City Council, Lagos, 1964, pp. 91–92.

5. John Harris, "Libraries and Librarianship in Nigeria at Mid-century," *Nigerian Lib.*, **6**(1/2), 30 (April/August 1970).
6. Carl M. White, *The National Library of Nigeria; Growth of the Idea, Problems and Progress*, Federal Ministry of Information, Lagos, 1964, p. 1.
7. Ref. *6*, p. 2.
8. M. O. Olaitan, "Publications Laws in Nigeria, 1950–1971," *Nigerian Lib.*, **8**(1), 35 (April 1972).
9. *Development of Public Libraries in Africa: The Ibadan Seminar*, UNESCO, Paris, 1954, 155 pp.
10. Carl M. White, Ref. *6*, p. 3.
11. "Library Advisory Committee of Nigeria," *WALA News*, **3**(2), 57 (March 1959).
12. John Harris, "National Library Development in Nigeria," *WALA News*, **4**(2), 56–57 (December 1961).
13. Carl M. White, Ref. *6*, p. 6.
14. Ref. *6*, pp. 57–59.
15. "An Act to Provide for the Establishment and Maintenance of a National Library; and for Purposes Connected Therewith," *Annual Volume of Laws of the Federal Republic of Nigeria*, Lagos, 1964, pp. D71–D77.
16. S. B. Aje, "National Library of Nigeria," *Nigerian Lib.*, **4**(3), 79 (December 1968). For discussions of the shortcomings of the 1964 National Library Act, see: Nat. M. Adeyemi, "The National Library of Nigeria and Library Development in Nigeria," *Libri*, **22**(1), 77–84 (1972); D. Agidee, "Legal Provisions for Library Development in Nigeria 1948–1968," *Nigerian Lib.*, **6**(1/2), 53–64 (1970); M. O. Olaitan, "Publications Laws in Nigeria, 1950–1971," *Nigerian Lib.*, **8**(1), 35–44 (April 1972).
17. Nigeria. "National Library Decree (No. 29) of 1970," *Suppl. Official Gaz.*, **57**(27), (May 14, 1970) Part A.
18. These laws are fully discussed in M. O. Olaitan, Ref. *8*.
19. See *Libraries in Nigeria; a Directory, 1971*, National Library of Nigeria, 1973, p. 9; and National Library of Nigeria, *Annual Report, 1970/71*, Lagos, 1973, p. 23.
20. National Library of Nigeria, *Annual Report 1968/69*, 1971, p. 15.
21. National Library of Nigeria, *Annual Report 1970/71*, p. 19.
22. S. B. Aje, Ref. *16*, p. 80.
23. A partial list of the publications of the National Library of Nigeria can be found in the *Annual Reports*.
24. Nigeria. *Second National Development Plan, 1970–74*, Federal Ministry of Economic Development and Reconstruction, Lagos, 1970, p. 257.
25. S. B. Aje, Ref. *16*, p. 80.
26. S. B. Aje, "Public Libraries in Western Nigeria," *WALA News*, **2**(3), 78–84 (1956); and J. A. Faseyi, "Public Library Service in the Former Northern Nigeria," *Nigerian Lib.*, **4**(3), 68–69 (December 1968).
27. *Development of Public Libraries in Africa: The Ibadan Seminar*, UNESCO, Paris, 1954, p. 143.
28. E. Sydney, "UNESCO Seminar on the Development of Public Libraries in Africa," *Lib. Assoc. Rec.*, **56**(3), 83 (1954).
29. John Harris, "Library Proposals for Nigeria," *WALA News*, **2**(2), 38–40 (1955).
30. John Harris, "Library Progress in West Africa; Presidential Address," *WALA News*, **2**(3), 57 (1956).
31. "Library Statistics for West Africa," *WALA News*, **4**(1), 22–23 (October 1961).
32. *NLA Newsletter*, No. 19/20, 19 (September/December 1972).
33. Kalu Okorie, "Lagos Municipal Library," *West African Lib.*, **1**(2), 7–8 (September 1954).
34. Irving Lieberman, *A Survey of the Lagos City Library; Complete Report*, Lagos City Council, Lagos, 1964, p. 87.

35. Lagos City Council Libraries, *A Guide to the Books and Services,* [1974], 20 pp.
36. *NLA Newsletter,* No. 19/20, 11 (September/December 1972).
37. J. E. Schofield, "The British Council and Library Development in Nigeria," *Lib. World,* **64**(747), 64–66 (September 1962).
38. *Libraries in Nigeria; a Directory, 1971,* pp. 13–14.
39. Western State Library, *Annual Report, 1971/72,* pp. 1–2.
40. Mid-West State Library, *Report of the Director, 1 Oct., 1970–31 March, 1973,* Mid-West Library Board, Benin City, 1973, pp. 1–2.
41. Nigeria. Mid-Western State, "Midwest Library Board Edict 1970," *Suppl. Midwestern State Nigeria Gaz.,* **8**(10), (February 18, 1971). Edict No. 4 of 1971.
42. Personal communication from the Acting Director, May 1974.
43. Mid-West State Library, *Report of the Director, 1 Oct., 1970–31 March, 1973,* pp. 15–17.
44. D. H. Gunton, "A Library in the Tropics: A History and a Blueprint," *Lib. Assoc. Rec.,* **63**(5), (May 1961).
45. J. A. Faseyi, "Public Library Service in the Former Northern Nigeria," *Nigerian Lib.,* **4**(3), 68–70 (December 1968).
46. F. A. Sharr, "The Library Needs of Northern Nigeria," *UNESCO Bull. Lib.,* **18**(6), 259–262 (November/December 1964).
47. For details of the distribution of the assets of the Regional Library Service, see J. A. Faseyi, Ref. *26,* pp. 72–73; and Robert Pearce, *Library Services in the New States of Nigeria; a Report Prepared for the Ministry of Information, Federal Government of Nigeria . . . 1968,* College of Librarianship, Aberystwyth, Wales, 1968, 23 pp.
48. Kano State Library, *Annual Report 1972/73,* Kano, 1973, pp. 1, 6.
49. Kano State Library, *Annual Report 1973/74,* Kano, 1974, pp. 9–10.
50. "North Central State Library Service," *NLA Newsletter,* No. 15, 13–14 (September 1971).
51. Kalu Okorie, "Eastern Regional Library Board," *WALA News,* **2**(4), 109–110 (1956).
52. S. H. Horrocks, "Eastern Region and UNESCO Public Library Pilot Project," *WALA News,* **3**(1), 12 (July 1958).
53. S. H. Horrocks, "UNESCO Public Library Pilot Project in the Eastern Region of Nigeria," *UNESCO Bull. Lib.,* **13**(1), 5 (January 1959). See also Kalu Okorie, "A Chance to Read in Eastern Nigeria," *Lib. J.,* **85**(20), 4101 (November 15, 1960).
54. S. H. Horrocks, *The Regional Central Library at Enugu, Eastern Nigeria: An Assessment, 1961,* UNESCO, Paris, 1962 (UNESCO/CUA/114), 55 pp.
55. For an account of the operation of this and other libraries in Biafra, see J. C. Anafulu, "An African Experience: The Role of a Specialized Library in a War Situation," *Special Lib.,* **62**(1), 32–40 (January 1971).
56. B. U. Nwafor, "Recorded Knowledge as War Casualty: An Account of Library Devastation During the Nigerian Civil War," *Lib. J.,* **96**(1), 42–45 (January 1971).
57. "East-Central State Library Board Edict 1971" (Edict No. 17 of 1971), *Suppl. East Central State Gaz.,* **2**(32), (August 5, 1971).
58. East-Central State Library Board, *Rebuilding Our Service: First Annual Report for the Years 1970/72,* State Central Library, Enugu, 1973, p. 24.
59. East-Central State Library Board, *Expanding Our Service; Second Annual Report for the Year 1972/73,* State Central Library, Enugu, 1973.
60. "Rivers State Library Service," *NLA Newsletter,* No. 16, 13–14 (December 1971); and *Libraries in Nigeria: a Directory, 1971,* pp. 22–23.
61. Communication from the State Librarian, May 1974.
62. Ref. *61.*
63. "State Library Edict 1973" (Edict No. 16 of 1973), *Suppl. South-Eastern State of Nigeria Gaz.,* **6**(52), (November 29, 1973).
64. W. Page, "School and Training College Libraries," *WALA News,* **3**(5), 244 (1960).

65. "Memorandum on School Libraries in West Africa," *WALA News,* **4**(3), 103–106 (June 1962).
66. J. O. Fadero, "The Federal School Library Service," *Nigerian Lib.,* **4**(3), 63–68 (December 1968). See also H. V. Bonny, "UNESCO's Role in School Library Development in Nigeria," *UNESCO Bull. Lib.* **20**(2), 71–77 (April 1960).
67. B. A. Oni-Orisan, "Education, School Libraries and Nigeria's Development Plan 1970–74," *Nigerian Lib.,* **8**(1), 21–27 (April 1972).
68. Dorothy S. Obi, "Libraries and Librarianship in the East Central State of Nigeria," Typescript.
69. H. V. Bonny, Ref. *66,* p. 77.
70 John Harris, "Libraries of Learning and Research in Nigeria," *Lib. World,* **64**(747), 80 (September 1962).
71. C. M. Petrie, "Special Libraries," *Nigerian Lib.,* **2**(2), 61–66 (September 1966).
72. Cocoa Research Institute of Nigeria, *Annual Report 1967/68,* Ibadan, 1969, pp. 7–8.
73. Nigeria. Federal Department of Agricultural Research, *Guide to the Federal Department of Agricultural Research,* Ibadan, 1965, pp. 7–19.
74. P. M. J. Edwardes, "The Library of the Institute for Agricultural Research, Ahmadu Bello University Zaria," *Nigerian Lib.,* **1**(1), 24–29 (January 1964).
75. International Institute of Tropical Agriculture, *Reports 1972–73,* Ibadan, 1974, p. 39.
76. E. T. A. Oguara, "Information Services for Commerce and Industry in Nigeria: Pathology, Diagnosis and Prescription," *Nigerian Lib.,* **5**(2), 44–54 (August 1969).
77. Irene Kluzek, "The Library of the Nigerian Institute of International Affairs," *Nigerian Lib.,* **4**(3), 76 (December 1968).
78. D. A. Cannon, "The Development of Medical Library Facilities in Nigeria," *Libri,* **3,** 184–187 (1954).
79. John Harris, "Medical Facilities in the Library of University College, Ibadan," *Libri,* **3,** 188–190 (1954).
80. B. O. Aboyade, "The University Library and Related Fields," in *The University of Ibadan, 1948–73* (J. F. Ade Ajayi and Tekene N. Tamuno, eds.), University Press, Ibadan, 1973, p. 136.
81. *Development of Public Libraries in Africa; the Ibadan Seminar,* UNESCO, Paris, 1954, p. 150.
82. *WALA News,* **2**(3), 96 (1956).
83. Harold Lancour, *Libraries in British West Africa,* Univ. Illinois Library School, Urbana, 1958, p. 27.
84. University of Ibadan. Institute of Librarianship, *Annual Report 1964/65,* p. 2.
85. B. O. Aboyade, Ref. *80,* p. 149.
86. Ref. *80.*
87. W. J. Plumbe, "Presidential Address," *Nigerian Lib.,* **1**(4), 164–165 (September 1965).
88. F. A. Sharr, Ref. *46.*
89. Janet L. Stanley, "The Training of Librarians in West Africa," *J. Education Librarianship,* **13**(2), 87 (1972).
90. Ahmadu Bello University. Department of Library Science, *2nd Annual Report, 1970/71,* Zaria, 1971, 8 pp. Mimeograph.
91. John Dean, "Professional Education in Nigeria," *Nigerian Lib.,* **2**(2), 70 (September 1966).
92. F. A. Ogunsheye, "Problem of Bibliographic Services in Nigeria," *Nigerian Lib.,* **5**(2), 62 (August 1969).
93. F. A. Ogunsheye, Ref. *92,* p. 63.
94. These state laws are discussed in the section on public libraries. For more detailed discussion of publications laws in Nigeria in general, see Nat. M. Adeyemi, "The National Library of Nigeria and Library Development in Nigeria," *Libri,* **22**(1), 77–84 (1972); M. O. Olaitan, "Publications Laws in Nigeria, 1950–1971," *Nigerian Lib.,* **8**(1), 35–44 (April 1972).

BIBLIOGRAPHY

Aboyade, B. O., "The University Library and Related Fields," in *The University of Ibadan, 1948–73* (J. F. Ade Ajayi and Tekene N. Tamuno, eds.), University Press, Ibadan, 1973.

"An Act to Provide for the Establishment and Maintenance of a National Library: and for Purposes Connected Therewith," *Annual Volume of Laws of the Federal Republic of Nigeria*, Lagos, 1964.

Adegoke, A., "The Evolution of Libraries in Nigeria," *Intern. Lib. Rev.*, **5**(4), 407–452 (October 1973). Bibliography, Tables, Maps.

Adeyemi, Nat. M., "The National Library of Nigeria and Library Development in Nigeria," *Libri*, **22**(1), (1972).

Agidee, D., "Legal Provisions for Library Development in Nigeria 1948–1968," *Nigerian Lib.*, **6**(1/2), (1970).

Aguolu, C. C., "Bibliographic Problems in Ghana, Nigeria and Sierra Leone," *Intern. Lib. Rev.*, **5**(2), 199–207 (April 1973).

Aje, S. B., "National Library of Nigeria," *Nigerian Lib.*, **4**(3), (December 1968).

Aje, S. B., "Public Libraries in Western Nigeria," *WALA News*, **2**(3), 78–84 (1956).

Akinyotu, A., "Proposals for Restructuring Library Education in Nigeria," *Nigerian Lib.*, **2**(1/2), 33–42 (April/August 1971).

Akinyotu, A., "Training and Education of Library Personnel in Nigeria: A Historical Survey," *West African J. Education*, **15**(3), 195–200 (1971).

Akinyotu, A., "Training and Education of Library Personnel in Nigeria: Comments and Proposals on Its Objectives and Content," *Nigerian Lib.*, **8**(2), 103–116 (August 1972).

Anafulu, J. C., "An African Experience: The Role of a Specialised Library in a War Situation," *Special Lib.*, **62**(1), (January 1971).

Bonny, H. V., "UNESCO's Role in School Library Development in Nigeria," *UNESCO Bull. Lib.*, **20**(2), 71–77 (April 1966).

Cannon, D. A., "The Development of Medical Library Facilities in Nigeria," *Libri*, **3**, (1954).

Dean, John, "Professional Education in Nigeria," *Nigerian Lib.*, **2**(2), 67–74 (September 1966).

Development of Public Libraries in Africa: The Ibadan Seminar, UNESCO, Paris, 1964, 155 pp.

East-Central State Library Board, *Expanding Our Service; Second Annual Report for the Years 1972/73*, State Central Library, Enugu, 1973.

East-Central State Library Board, *Rebuilding Our Service; First Annual Report for the Years 1970/72*, State Central Library, Enugu, 1973.

"East-Central State Library Board Edict 1971" (Edict No. 17 of 1971), *Suppl. East Central State Gaz.*, **2**(32), (August 5, 1971).

Edwardes, P. M. J., "The Library of the Institute for Agricultural Research, Ahmadu Bello University Zaria," *Nigerian Lib.*, **1**(1), (January 1964).

Enu, C. E., "Careers in Librarianship in Nigeria: Past and Present," *Libri*, **17**(4), 233–245 (1967).

Enwonwu, R. C., "The Role of Nigerian Public Libraries in Adult Education," *UNESCO Bull. Lib.*, **27**(6), 331–334 (November–December 1973).

Fadero, J. O., "The Federal School Library Service," *Nigerian Lib.*, **4**(3), (December 1968).

Faseyi, J. A., "Public Library Service in the Former Northern Nigeria," *Nigerian Lib.*, **4**(3), (December 1968).

Gunton, D. H., "Library in the Tropics: A History and Blueprint," *Lib. Assoc. Rec.*, **63**(5), 149–154 (May 1961).

Harris, John, "Libraries and Librarianship in Nigeria at Mid-century," *Nigerian Lib.*, **6**(1/2), (April/August 1970).

Harris, John, "Libraries of Learning and Research in Nigeria," *Lib. World*, **64**(747), 68–80 (September 1962).

Harris, John, "Library Progress in West Africa; Presidential Address," *WALA News*, **2**(3), (1956).

Harris, John, "Library Proposals for Nigeria," *WALA News*, **2**(2), (1955).

Harris, John, "Medical Facilities in the Library of University College Ibadan," *Libri*, **3**, (1954).

Harris, John, "National Library Development in Nigeria," *WALA News*, **4**(2), (December 1961).

Horrocks, S. H., "Eastern Region and UNESCO Public Library Pilot Project," *WALA News*, **3**(1), (July 1958).

Horrocks, S. H., *The Regional Central Library at Enugu, Eastern Nigeria: An Assessment, 1961*, UNESCO, Paris, 1962 (UNESCO/CUA/114).

Horrocks, S. H., "UNESCO Public Library Pilot Project in the Eastern Region of Nigeria," *UNESCO Bull. Lib.*, **13**(1), 5–7 (January 1959).

International Institute of Tropical Agriculture, *1971 Report*, Ibadan, 1972.

Kano State Library, *Annual Report 1972/73*, Kano, 1973.

Kano State Library, *Annual Report 1973/74*, Kano, 1974.

Kluzek, Irene, "The Library of the Nigerian Institute of International Affairs," *Nigerian Lib.*, **4**(3), (December 1968).

Kulkarni, A. M., "Library Service in Teacher Training Colleges with Special Reference to Nigeria," *Nigerian Lib.*, **2**(3), 98–100 (December 1966).

Lagos City Council Libraries, *A Guide to the Books and Services*, [1974], 20 pp.

Lancour, Harold, *Libraries in British West Africa*, Univ. Illinois Library School, Urbana, 1958.

Lawani, S. M., "Policies for Scientific and Technical Documentation in Nigeria," *Nigerian Lib.*, **8**(2), 123–127 (August 1972).

Libraries in Nigeria; a Directory, 1971, National Library of Nigeria, Lagos, 1973.

"Library Advisory Committee of Nigeria," *WALA News*, **3**(2), (March 1959).

"Library Statistics for West Africa," *WALA News*, **4**(1), (October 1961).

Lieberman, Irving, *A Survey of the Lagos City Library; Complete Report*, Lagos City Council, Lagos, 1964.

"Memorandum on School Libraries in West Africa," *WALA News*, **4**(3), (June 1962).

Mid-West State Library, *Report of the Director, 1 Oct. 1970–31 March 1973*, Mid-West Library Board, Benin City, 1973.

Mould, R. A., "The Development of Libraries in Northern Nigeria," *Lib. Materials Africa*, **10**(3), 179–183 (December 1972).

National Library of Nigeria, *Annual Report 1968/69*.

National Library of Nigeria, *Annual Report, 1970/71*, Lagos, 1973.

Nigeria. *Economic and Statistical Review 1972*, Central Planning Office, Federal Ministry of Economic Development and Reconstruction, Lagos, 1973.

Nigeria Handbook, 1973, Federal Ministry of Information, Lagos, 1973.

Nigeria. Mid-Western State, "Mid-West Library Board Edict 1970," *Suppl. Midwestern State of Nigeria Gaz.*, **8**(10), (February 18, 1971). Edict No. 4 of 1971.

Nigeria. "National Library Decree" (No. 29 of 1970), *Suppl. Official Gaz.*, **57**(27), (May 14, 1970) Part A.

Nigeria. *Second National Development Plan, 1970–74*, Federal Ministry of Economic Development and Reconstruction, Lagos, 1970.

Nwafor, B. U., "Recorded Knowledge as War Casualty: An Account of Library Devastation During the Nigerian Civil War," *Lib. J.*, **96**(1), (January 1971).

Nwoye, S. C., "Library Cooperation: Some Proposals for Organisation in Nigeria," *Nigerian Lib.*, **1**(3), 115–124 (September 1964).

Odeinde, T. O., "Documentation and Information Services for Science and Technology in Nigeria," *Nigerian Lib.*, **8**(1), 1–12 (April 1972).

Oguara, E. T. A., "Information Services for Commerce and Industry in Nigeria: Pathology, Diagnosis and Prescription," *Nigerian Lib.*, **5**(2), (August 1969).

Ogunsheye, F. A., *Nigerian Library Resources in Science and Technology*, Institute of Librarianship, University of Ibadan, 1970, 44 pp.

Okorie, Kalu, "A Chance to Read in Eastern Nigeria," *Lib. J.*, **85**(20), 4100–4103 (November 15, 1960).

Okorie, Kalu, "Eastern Regional Library Board," *WALA News*, **2**(4), (1956).

Okorie, Kalu, "Legal Responsibility for Public Library Development in Nigeria," *Lib. Trends*, 26–30 (July 1960).

Okorie, Kalu, "Library Resources in Nigeria: Present Position and Future Friends," *Nigerian Lib.*, **1**(3), 101–112 (September 1964).

Okorie, Kalu, "Problems of Public Library Development in Nigeria," *Lib. World*, **60**(705), 161–165 (March 1959).

Okorie, Kalu, "The Progress of Public Libraries in Eastern Nigeria," *Lib. World*, **64**(747), 60–62 (September 1962).

Olaitan, M. O., "Publications Laws in Nigeria, 1950–1971," *Nigerian Lib.*, **8**(1), 35–44 (April 1972).

Oluwakuyide, A., "An Examination of Nigerian Medical Library Service and Problems," *Bull. Med. Lib. Assoc.*, **60**(2), 315–318 (April 1972).

White, Carl M., *The National Library of Nigeria: Growth of the Idea, Problems and Progress*, Federal Ministry of Information, Lagos, 1964.

Sam C. Nwoye

NIGERIAN LIBRARY ASSOCIATION

See also *West African Library Association*

Founding

The Nigerian Library Association (NLA) was inaugurated December 16, 1962. Its establishment was an outgrowth of the national reorientation which followed the independence of most West African countries, resulting in the reconstitution of the West African Library Association (the professional association for the English-speaking countries of West Africa from 1954 to 1962) into a federation of West African Library Associations (WALA). The proposal for reorganization of WALA was brought to the floor of the Annual General Meeting of the West African Library Association, held June 18, 1961, in the Committee Room, House of Representatives, Lagos, where it was moved:

> That, believing it essential for library development in West Africa that strong national library associations be developed within each territory, this Conference is in favour of the reconstitution of the West African Library Association as a federation of national library associations and requests Council to make necessary arrangements to implement this (*1*).

Subsequently it was recorded that:

> To give all members an opportunity to vote on the issue, proposals were drawn up by Council and mailed to all members to study. A postal ballot was then taken to determine whether or not the Association should be reorganized on the lines proposed. On 12 May 1962, Messrs. S. B. Aje and N. Amankwe acting as returning officers under the auspices of the Council, scrutinized the returns. The result of the ballot showed that out of the 83 votes cast (Nigeria 59, Ghana 23, Sierra Leone 1) 81 members were in favour of the reorganization while only 2 were against (*2*).

The proposals thus adopted contained the clause that national associations could be created with effect from April 1, 1962. The Executive Committee of the Nigeria Division of the West African Library Association (comprising Kalu Okorie, ag. chairman; John Harris; C. C. Momah; R. A. Areje; Mrs. E. Oku; and F. O. Aramide, secretary) adopted the following resolution at its meeting of November 9, 1962:

> That we as elected representatives of the Nigeria Divisional Executive of WALA, hereby form the Nigerian Library Association as directed by the resolution of the WALA Conference (1961), dissolve the Nigeria Divisional Executive of WALA and reconstitute it as the Provisional Executive of the Nigerian Library Association (*3*).

At its Inaugural Conference, attended by 51 delegates representative of the five university libraries, the National Library, the three regional libraries, Lagos Municipal Library, Kano Emirate Library, and a number of schools, colleges, and other bodies—and including three visiting delegates—a draft constitution hewing closely to that of the West African Library Association was adopted, subject to further amendments. The Prime Minister of Nigeria was elected as patron of the association. Kalu Okorie, director of the Eastern Nigeria Library Board Services, was elected first president while John Harris, librarian of the University of Ibadan, became vice-president and F. O. Aramide of the University of Ibadan Library, the first secretary-treasurer. John Harris continued his editorship of the association's journal by becoming the first editor of *Nigerian Libraries* in succession to his editorship of *WALA News*. Members of the first Council were J. O. Dipeolu, C. C. Momah, Mrs. F. A. Ogunsheye, Dr. Carl White, Mrs. Joan Allen, and G. N. Nwikina. Further council members, it was noted, would be elected in accordance with the constitution, by the branches or divisions when formed (*4*).

Purposes

The Nigerian Library Association Constitution states that the purposes of the association shall be:

a) to unite all persons interested in libraries and librarianship by holding conferences and meetings, by issuing publications and by any other means;
b) to safeguard and promote the professional interests of librarians and to promote the establishment and development of libraries;
c) to establish and maintain standards in the education and certification of librarians;
d) to watch any legislation affecting libraries and to assist in the promotion of such legislation as may be considered necessary for the regulation and management or extension of libraries within Nigeria;
e) to promote and encourage bibliographical study and research and library cooperation (*5*).

The association's overriding concern is with the aims and mission of the profession. While realizing that it cannot fulfill these aims without specific concern for the overall advancement of the lot of its individual members, it prefers to demonstrate this concern by improving the position of the profession generally.

Membership

The Nigerian Library Association Constitution states as its first purpose: "to unite all persons interested in libraries and librarianship." Accordingly, membership of the association is open to everyone interested in the development of libraries in Nigeria and is not restricted to practicing librarians only. At various times it has been suggested that the NLA distinguish in its membership between professional and nonprofessional members, with only the former entitled to full membership; but this suggestion has never gained the support of the majority of members, who appear to be well aware that the association has gained tremendously from its open door policy.

There are five types of membership in the association:

1. *Honorary members.* Persons who have rendered distinguished service in promoting the objects of the association may be elected honorary members at an annual general meeting. Honorary members shall be entitled to the same rights and privileges as personal members.
2. *Personal members.* Librarians, bibliographers, members of library boards in Nigeria and of library committees in Nigeria, and other persons connected with the administration of libraries or interested in the objects of the association may be admitted as personal members.
3. *Institutional members.* A library or other institution may be admitted to membership and it shall be entitled to nominate a delegate. Such a delegate may attend the meetings of the association and on behalf of the library or institution shall enjoy all the privileges of membership.
4. *Corresponding members.* Persons and institutions outside Nigeria may be admitted as corresponding members. Corresponding members shall be entitled to receive publications usually distributed to members but they may not vote or hold office.
5. *Endowment membership.* Persons and institutions may be admitted to endowment membership at an amount fixed by Council. Such members shall enjoy all the privileges of membership and their subscriptions shall be treated as capital contributions to the funds of the association (*6*).

Membership dues are on a sliding scale based on amount of salary or budget. Corresponding membership is based upon the rate of cost of the publications.

A membership analysis by N. O. Oderinde for the years 1962 through 1967 revealed that from an original membership of 53 in 1962/63, the association showed a steady rise in growth to 233 (107 personal and 126 institutional members) in 1963/64; 341 (178 personal and 163 institutional) in 1964/65; and 375 (175 personal and 200 institutional) in 1965/66, the last year for which full membership figures were available until the end of the Nigerian Civil War. Membership figures which excluded the Northern Division totaled 438 in 1966/67, but with no Eastern or Northern membership figures available, the register fell to only 99 in 1967/68 (*7*).

In 1969 membership figures rose to 156 (*8*) and in 1970 to 167 (*9*). With the reinauguration of divisions throughout the Federation in 1971, membership regained some of its prewar buoyance, so that by the end of 1971, membership was in the neighborhood of 300 members (*10*). At the end of 1975 the treasurer, D. E. Uba, reported a membership of just under 600.

Organization Structure

OFFICERS

The Constitution of the Nigerian Library Association states:

> The affairs of the Association shall be managed by a Council consisting of the President, Vice-President, Hon. Secretary, Hon. Treasurer, Hon. Publicity Officer, Hon. Editor and eight Councillors one of whom should be the retiring President and a representative of each Division and Section (*11*).

From its foundation until the 1966 Annual General Meeting, officers were elected annually, but in that year a motion calling for 2-year terms of office was passed and the constitution amended to read:

> The President, Vice-President, Hon. Secretary and Hon. Treasurer shall hold office for 2 years ending at the A.G.M. nearest the end of the second year (*12*).

COUNCIL

Council has wide powers in executing its responsibilities. It has the power to fill vacant offices; to approve bylaws or rules of procedure for the conduct of affairs of any division/branch, section, committee or other organ of the association (subject to review at any Annual General Meeting of the association); to appoint such committees as it considers desirable for the efficient performance of its duties (the composition and powers of such committees to be determined from time to time by Council); to appoint committees to act jointly with other bodies for any purpose deemed desirable; to invest the funds of the association in securities and appoint trustees for that purpose; to operate a Savings Bank Account in the name of the association; to fill such paid posts as may have been established by a General Meeting; and to convene an Annual Conference of members of the association for which it shall have drawn up a program and prepared an annual report (*13*).

DIVISIONS

The association is organized on a divisional basis corresponding to the territorial divisions of Nigeria. The constitution states of territorial divisions:

> i) A division shall include all members of the Association working in one of the States of the Federal Republic.
> ii) The purpose of a Division shall be to further the general objects of the Association within its area and to unite members by means of meetings and conferences.
> iii) A Division may form local branches from among its members and make financial grants to branches on such basis as the Division may decide (*14*).

Recognizing that the divisions provide the real opportunity for grass roots participation, the constitution provides that Council shall make financial grants to a division from the funds of the association of not less than 50% of the total subscriptions collected from members in the division. Each division is represented on Council by a councillor elected by the division.

Under the first Republic of Nigeria, virile divisions existed in the Eastern, Northern, and Western Regions as well as the Federal Territory of Lagos. Following upon the decree promulgating a 12-state structure for Nigeria, the association has encouraged the formation of divisions on a state–territorial basis, and most states in the former Western and Eastern Regions have now formed their divisional associations, while the former Northern Region Division has become the Northern States Division.

SECTIONS

The constitution provides for the establishment within the association of groups for the consideration of special types of library work. Sections dealing with school libraries, public libraries, special libraries, and university libraries exist at a national level and within some state divisions. The constitution encourages the development of sections, for which the following provisions are made:

> A Section shall be an organization of members of the Association irrespective of geographical distribution who provide, are engaged in, or are otherwise interested in library service of a particular type. The purpose of the Section shall be to further the general objects of the Association by the consideration of problems of policy and administration special to that type of library service and to unite members by means of meetings and conferences (*15*).

COMMITTEES

Some of the outstanding achievements of the association have grown out of the work of committees appointed by Council.

Committee on Library Education

Library qualifications and training have been issues of persistent interest to the association, which maintains a Standing Committee on Library Education set up in 1965. Its terms of reference as presently defined are:

1. To collate the various schemes for the training of professional librarians and other library workers in Nigeria.
2. To prepare national standards of certification for professional librarians and other library workers in Nigeria.
3. To explore means of implementing certification at the national level.
4. To serve as a clearinghouse for information on library education.
5. To prepare a register of professional librarians in Nigeria (*16*).

Committee on Salaries

The association maintains a Standing Committee on Salaries. This committee examines the problems arising from lack of uniform definitions of professional qualifications and corresponding conditions of service and salaries. By its terms of reference it considers all matters relating to recruitment, salaries, and conditions of service for all library personnel (*17*). The committee works in close co-operation with the Standing Committee on Library Education.

Committee on Cataloguing and Classification

The Committee on Cataloguing and Classification was the result of a motion passed at the 1965 NLA Conference. It was established by Council under the following terms of reference and maintains a lively and active existence:

1. To constitute the National Committee of the International Conference on Cataloging Principles and to contribute to that committee our national usages as regards entries for names of persons, etc.
2. To find a means of revising the Africana provisions in the existing schemes of classification in use in this country and to cooperate with the works of other international bodies dealing with the revision of Classification Schemes, e.g., Central Classification Committee of the FID (*18*).

Committee on Library Resources

Yet another committee formed as a result of the 1965 conference was the Standing Committee on Library Resources. Its terms of reference are:

> To make recommendations for the strengthening, coordination, and fullest use of library resources; and to consider, through appropriate subcommittees when necessary, cooperative acquisition of library materials, interlibrary loans, development of services for special needs, and the compilation of bibliographical records (*19*). The committee was also empowered to take on the duties of the Research Committee (*20*).

Committee on School Libraries

The NLA Standing Advisory Committee on School Libraries, successor to the Ad Hoc Committee on School Library Service in Nigeria, has the following terms of reference:

1. To examine the present state of development of school libraries in the country and recommend policies for future development.
2. To compile a list of books suitable for a model school library, based on the collections of the Lagos State School Library Service and the Curriculum and Reference Library of the University of Lagos College of Education Library (*21*).

Publications Committee

In 1971 a Publications Committee was set up to absorb the former Editorial Board of Nigerian Libraries. The terms of reference of the committee are:

1. To be responsible for formulating a publications policy for the Nigerian Library Association.
2. To encourage and sponsor scholarly publications on librarianship and related subjects.
3. To publish manuscripts considered to be of high quality, and to distribute such publications.
4. To disseminate news and information through the medium of a newsletter (*22*).

The structure of the committee is:

Periodical Publications
Editorial Board, *Nigerian Libraries*
Nonperiodical Publications
Business Manager

The membership of the committee includes the president and secretary of the association, the editors and business manager of *Nigerian Libraries,* and the editor of the *NLA Newsletter.*

Ad Hoc Committees

Ad hoc committees form an important mechanism of Council. Some of these have been the Ad Hoc Committee on School Library Service (see Committee on School Libraries, above), the Working Party on Public Libraries, Ad Hoc Committee on Legal Recognition of the Profession, Ad Hoc Committee NLA Permanent Secretariat, National Book and Library Week Committee, Ad Hoc Committee on Seminars with Other Professions, and the John Harris Annual Prize Committee (*23*). This latter committee was set up in 1968. Its purpose was to honor the memory of Professor John Harris, a moving spirit behind the West African Library Association (WALA) and the Nigerian Library Association, by awarding an annual prize in his name to the best entry in an annual essay competition open to all members of the association (*24*). Mr. S. C. Nwoye, university librarian, University of Nigeria, Nsukka, was appointed chief assessor.

NLA HEADQUARTERS

All offices in the Nigerian Library Association have been honorary from its foundation. The major libraries of the country have in turn offered facilities to back up the officers of the moment in the functioning of a secretariat. While at all times grateful for this cooperation, without which it could not have functioned, the association as it has grown has increasingly felt the need for a permanent headquarters. At the 1966 Annual General Meeting of the association held at the University of Nigeria, Nsukka, the following motion proposed by the Eastern Division was passed:

> That the Council should explore the possibility of having a permanent Secretariat for the Association. To this end, Council should approach UNESCO and other Foundations to support this through provision of grants (*25*).

Subsequently the Ad Hoc Committee on NLA Permanent Secretariat was established by Council with the following terms of reference:

> To draw up, for consideration of Council, proposals for the N.L.A. Secretariat, for raising funds and for launching an endowment fund (*26*).

The ad hoc committee submitted its report to Council on April 2, 1970 and the report as further amended was accepted by the Annual General Meeting on April 4, 1970. The committee listed exhaustively the functions the secretariat would be called upon to perform and recommended a permanent physical plant costing £N200,000 and a paid staff of professionals and supportive staff. Importantly, it was recommended that there be a paid secretary of the association. As a means of realizing these goals, the committee recommended that members of the association should be made to contribute a special levy, that requests for grants should be made to the federal government and all the 12 state governments of Nigeria, and that external grants should be sought (*27*). The association has been actively pursuing these means and has opened a Permanent Secretariat Building account (*28*).

Achievements

ANNUAL CONFERENCES

The association has held the following conferences:

Place	*Date*	*Theme*
Ibadan	December 15–17, 1962	Inaugural Conference
Lagos	April 10–13, 1964	Foundations for National Library Service in Nigeria
Zaria	April 2–5, 1965	Libraries at Work
Nsukka	March 24–28, 1966	Books in the Building of Our Nation
Ibadan	September 13–15, 1968	New Developments on the Nigerian Library Scene
Lagos	April 1–4, 1970	Twenty Years of Library Development in Nigeria
Jos	April 1–4, 1971	Libraries in the New National Structure
Enugu	March 23–26, 1972	Library Resources in Nigeria
Ibadan	July 3–9, 1973	Service Concept of Libraries
Benin	December 2–5, 1974	Toward Scientific Management in Nigerian Libraries
Kano	November 17–25, 1975	Libraries in the Cultural Development of a Nation

PUBLICATIONS

The major publication of the association is *Nigerian Libraries.* Its first editor, Professor John Harris, university librarian, University of Ibadan, was succeeded in 1966 by the present editor, E. B. Bankole, university librarian, University of Lagos. The comprehensive list of association publications is as follows:

Nigerian Library Association	*Nigerian Newsletter*	Vol. 1, No. 1, February 1964– (3 times a year)
	N.L.A. Newsletter	Vol. 1, No. 1, April/May 1963– (irregular)
Benue-Plateau State Division	*Benue-Plateau State Library Post*	Vol. 1, No. 1, 1970– (irregular)
Eastern Nigeria Division	Eastern Nigeria Division, *Occasional Papers*	No. 1, July 1963–No. 5, November 1965 (irregular)

School Libraries Section	Eastern Nigeria School Libraries Association, *Bulletin* (Vol. 3, No. 1 published as Biafra School Libraries Association, *Bulletin*)	Vol. 1, No. 1, July 1963–Vol. 3, No. 1, July 1967 (3 times a year)
	A Manual for School Libraries on Small Budgets, edited by Mary R. Blocksma and Geoffrey W. Cleaver	(1967)
East-Central State Division		
School Libraries Section	East-Central State School Libraries Association, *Bulletin*	Vol. 1, No. 1, June 1972– (quarterly)
	East-Central State School Libraries Association, *Occasional Papers*	No. 1, 1974– (irregular)
	A Manual for School Libraries on Small Budgets, edited by Rose Umelo and Dorothy S. Obi	Revised edition, 1975
Lagos Division	*Information Bulletin* (superseded by *Lagos Librarian*)	Vol. 1, No. 1, September 1965–Vol. 1, No. 6, November 1966 (bimonthly)
	Lagos Librarian	Vol. 2, No. 1, March 1967– (quarterly)
	Occasional Papers	No. 1, 1966–No. 3, 1967 (irregular)
Northern Division	*Northern Nigeria Library Notes* (superseded by *Northern State Library Notes*)	No. 1, May 1964–No. 4, October 1965 (irregular)
Northern States Division	*Northern State Library Notes* (supercedes *Northern Nigeria Library Notes*)	No. 5, 1971– (irregular)
School Library Association	*Northern States Newsletter*	Vol. 1, No. 1, 1970– (irregular)
Western Division	*Western Division Newsletter*	No. 1, 1962–1967 (irregular)
	Western Nigeria Library Bulletin	Vol. 1, July, 1964–Vol. 3, 1967 (irregular)
Western State Division	*Western Nigeria State Division Newsletter*	No. 1, January 1970– (irregular)
	Western Nigeria Library Bulletin	Vol. 4, July 1967– (irregular)

Nigerian Libraries and the *N.L.A. Newsletter* are obtainable by membership from the honorary secretary, Nigerian Library Association. *Nigerian Libraries,* which is indexed in *Library and Information Science Abstracts* and *Library Literature,* is obtainable on subscription from the circulation manager, *Nigerian Libraries,* c/o Ibadan University Library, Ibadan, Nigeria. Publications of the divisions are obtainable only from the divisional secretaries.

Divisional and Sectional Activities

EASTERN NIGERIA DIVISION

The Eastern Nigeria Division came into being on March 2, 1963 when a preliminary meeting was held and officers were appointed. These appointments were ratified at the Inaugural conference held May 4–5, 1963, attended by 45 delegates. The first officers of the division were Mr. S. C. Nwoye, chairman and representative of the division on NLA Council; Mr. G. N. Nwikina, vice-chairman; Mrs. Dorothy S. Obi, secretary/treasurer; and the following committee members: Miss M. Jolley, Brother Malachy Tuohy, Mr. R. N. Ukaonu, and Mr. A. U. Opara. As a follow-up of lectures by Dr. A. B. Fafunwa of the Faculty of Education, University of Nigeria, on "The Library and Education"; and by Mr. H. V. Bonny, UNESCO library adviser to the Nigerian government, on "School Libraries: Purpose and Policy," the following resolution was moved from the floor by Miss Marjorie Jolley, Archdeacon Crowther Memorial Grammar School, Elelenwa:

> May I move that in view of the manifold problems confronting teachers in charge of Secondary School and Training College Libraries, a sub-committee of this body be formed to explore these problems and a conference of such teachers called in Enugu during the next school holidays, to be addressed by trained librarians capable of helping them to solve them (29).

This resolution was unanimously adopted and a subcommittee appointed composed of Mr. G. W. Cleaver (chairman), Dennis Memorial Grammar School, Onitsha; Miss Marjorie Jolley (secretary), Archdeacon Crowther Memorial Girls' School, Elelenwa; and five others, to form the Planning Committee for the School Libraries Section of the division. Thus from its inception the Eastern Division was closely identified with school library development.

With three of the papers of this conference, the division inaugurated its *Occasional Papers* series. It held annual conferences subsequently in 1964, 1965, and 1966; and in 1966 played host to the Nigerian Library Association annual conference at the Continuing Education Centre, University of Nigeria, Nsukka, the theme of which was "Books in the Building of our Nation." At this conference the division saw its divisional chairman and secretary move to the national level to become the president and secretary of the Nigerian Library Association. Soon thereafter, however, the Nigerian Civil War struck and the curtain of events lowered on that chapter of the association. Professional activity in the area resumed at the end of the war in the East-Central State Division, the South-Eastern State Division, and the Rivers State Division.

Eastern Nigeria School Libraries Association

The Eastern Nigeria School Libraries Association (ENSLA) was the joint creation of professional librarians and practicing educators. It was launched as the School Libraries Section of the Eastern Nigeria Division on May 3, 1963. Its Executive Committee was composed, in addition to its officers, of a representative from each of the education zones of Eastern Nigeria. These zonal representatives further organized the school librarians within their respective zones. This ensured a broad membership base which was further strengthened by the association's indefatigable Chairman, G. W. Cleaver, teacher/librarian, Dennis Memorial Grammar School, Onitsha, who toured all parts of Eastern Nigeria advising on school library organization. By 1966 the association embraced a membership of 225 postprimary schools.

Notable among the achievements of ENSLA were:

1. The establishment in 1965 of the School Libraries Office in the Eastern Nigeria Ministry of Education manned by Mary Blocksma, Peace Corps Volunteer, who combined the functions of school libraries advisor with those of secretary and editor of ENSLA.
2. The establishment in 1966 of the post of inspector of school libraries, Ministry of Education, and the recruitment of a professional graduate librarian, Mr. A. C. Ndulue, as inspector of school libraries.
3. The acceptance by the Ministry of Education of minimum standards for school libraries based on guidelines drawn up by ENSLA and the enforcement of these standards through inspection.
4. Organization of annual week-long training courses for teacher–librarians at the University of Nigeria, Enugu Campus, in 1964, 1965, and 1966.
5. Publication of its journal, *ENSLA Bulletin*, lists of recommended books and recommended periodicals for school libraries, and its *Manual for School Libraries on Small Budgets* (*30*).

In 1966 the association submitted a proposal to the Ministry of Education and to the British Council for the development of a model school library project to be located at Owerri. The association was tackling the problems of status and salary for school librarians and the development of libraries for primary schools when the war intervened.

EAST-CENTRAL STATE DIVISION

The East-Central State Division was inaugurated at a meeting of librarians of the state held on Saturday, May 22, 1971 at the State Central Library, when the following motion was proposed by G. N. Okoli and unanimously adopted:

> Whereas with the creation of states in the Federal Republic of Nigeria in 1967 the Eastern Region of Nigeria ceased to exist; and whereas, by that very fact, the Eastern Nigeria Division of the Nigerian Library Association also ceased to exist, thus creating a library association vacuum in this part of the country; whereas, apart from the usual need for a body to promote the library profession and the development of libraries, there is, in this part of Nigeria, the added need and urgency for a professional body to tackle the enormous post-war library problems in the East Central State; inspired by all these considerations and encouraged by the demands of librarians for the formation of a library association in this state, I move that an East Central State Division of the Nigerian Library Association be formed at this meeting of librarians in the East Central State (*31*).

At this meeting Nwozo Amankwe was elected chairman; Mrs. M. A. Nwakoby, vice-chairman; N. N. Onyechi, secretary; and D. E. Uba, treasurer. Other members of the executive were K. C. Okorie, Mrs. D. Obi, B. U. Nwafor, G. N. Okoli, C. N. Ekweozor, J. Chinedo, and I. U. Obiefula. Arrangements were made for the formal launching of the division to be held August 13, 1971 by His Excellency the Administrator of the East-Central State at a conference attended by librarians from the state and other parts of the Federation.

In his opening address the Chairman of the Division, Mr. Nwozo Amankwe, reviewed the achievements of the former Eastern Nigeria Division and noted that the new division would face pressing challenges in the year of reconstruction ahead (*32*). Subsequently, the division formed both a Special Libraries and a School Libraries Section, and pursuing the problems of these groups it was able to assist in the re-establishment of standards for the state's school libraries and in the initiation of an integrated salary and career structure for government librarians. To the credit of its members is the East-Central State Library Board Edict 1971, and the formation and organization of the East-Central State School Libraries Association. The division organizes annual conferences, special meetings, and lectures. Its major activities are carried out through the PAC (Program and Activities Committee) and its ad hoc subcommittees. In 1972 the division hosted the annual Nigerian Library Association Conference, the theme of which was "Library Resources in Nigeria."

East-Central State School Libraries Association

The East-Central State School Libraries Association (School Libraries Section, East-Central State Division, Nigerian Library Association) was inaugurated December 4, 1971 at an East-Central State Division Conference on School Libraries held at the British Council Hall, Enugu. Its first officers were Mr. J. N. Nnebe (chairman), Lourdes Training College, Iwolo; Mr. P. Azuwuine Njoku (vice-chairman), Fatima Training College, Nsu; and Mrs. Dorothy S. Obi, (secretary/treasurer), Enugu Campus Library, University of Nigeria. The association immediately set about reviving the state's school libraries. It acted as a pressure group on government for the re-establishment of standards for the school libraries of the state and the expansion of the School Libraries Section of the Ministry of Education to enable it to develop a model school library service.

The association held its first postwar refresher course for teacher–librarians in March 1972, barely 4 months after its formation, and has continued to hold these courses annually. The *ENSLA Bulletin* was revived as a medium of communication under the new title of *ECSLA Bulletin*, and a new publication, the *ECSLA Occasional Papers*, was inaugurated. The *Manual for School Libraries on Small Budgets* was revised and reprinted.

The East-Central State School Libraries Association forms a part of the School Libraries Section, Nigerian Library Association. It became a member of the International Association for School Librarianship (IASL) in 1973 and of the International Federation of Library Associations (IFLA) in 1975.

RIVERS STATE DIVISION

The Rivers State Division was inaugurated in the latter part of 1972. Like its counterparts of the former Eastern Nigeria Division—the East-Central and the South-Eastern State Divisions—its major aims were the reconstruction of libraries and the expansion of library services. To the credit of its members are the Rivers State Library Board Edict, 1971, by which the State Library Services were given legal status; and training courses for teacher–librarians, the first of which was held in 1972. The division organizes lectures and conferences. The chairman of the division is S. Yobe; the vice-chairman, Mrs. G. Nwagha; the secretary is S. K. Ogunka; the treasurer, Mrs. M. F. Ateli, and the divisional representative on Council, Mr. G. N. Nwikina, director of the State Library Services.

SOUTH-EASTERN STATE DIVISION

The South-Eastern State Division was launched February 24, 1972 (*33*). Its first chairman was Mrs. E. E. Oku, director of the State Library. Since its formation it has actively pursued the goals of reconstruction of libraries in the state and the expansion of library services. To the credit of its members is the State Library Edict, 1973, giving legal status to the State Library Services, as well as the establishment of the state's School Library Service and annual refresher courses for teacher–librarians.

LAGOS DIVISION

The Lagos Division was the natural successor of the Lagos Branch, Nigerian Division, West African Library Association (inaugurated 1958), which had maintained a high level of regular activities including lecture courses for library assistants (*34*). It was reconstituted as the Lagos Division in 1963 (*35*). The officers of the Lagos Division for 1964/65 were Mr. S. O. Falayi, chairman; and Mr. J. I. Chinedo, honorary secretary/treasurer. The division tackled the problems of professional staffing for Government Ministry libraries, the establishment of a National Library, and cooperation among Lagos libraries as well as holding general meetings, lectures, and symposia for its members and publishing the Lagos Division *Information Bulletin* and its *Occasional Papers*. The division was host to the 1964 Nigerian Library Association Conference, the theme of which was "Foundations for National Library Service in Nigeria."

LAGOS STATE DIVISION

With the change to a 12-state political structure, the Lagos Division became the Lagos State Division, a change reflected for the first time at the 1967/68 Nigerian Library Association Conference. The name of the division's publication changed to *Lagos Librarian*. The division organizes annual Book Weeks; holds lectures, symposia, and general meetings; and arranges visits to libraries for its members. It played host to the post-Civil War conference of the association, the theme of which was "Twenty Years of Library Development in Nigeria."

Lagos State School Library Association

The Lagos State School Library Association was inaugurated January 29, 1976 through the initiative of J. O. Fadero, principal librarian, School Library Service, Lagos State, as a forum for school librarians to exchange ideas and promote development of school libraries in Lagos State.

NORTHERN DIVISION

The Northern Division was formed on January 5, 1963 as a successor to the Northern Region Branch of the Nigerian Division of the West Africa Library Association at a weekend meeting at the Kashim Ibrahim Library, Ahmadu Bello University, Zaria, under the chairmanship of Mrs. Joan Allen. The first annual conference of the Northern Division was held at the Northern Regional Library, Kaduna, April 27–28 of the same year. At this meeting Mallam S. Bata was elected chairman and Miss R. Raddon, secretary. The division held a third weekend meeting at the Veterinary Research Library, Vom, on October 19–20, 1963 (*36*).

The pattern of weekend meetings continued in 1964 with a meeting held in the Kashim Ibrahim Library and a tour of the new Institute of Administration Library, on January 25th. On March 14th the membership met again, this time in the President Kennedy Library, Institute of Administration, to discuss the newly published Sharr Report, "The Library Needs of Northern Nigeria" (*37*).

The division published *Northern Nigeria Library Notes*.

In 1965 it hosted the Nigerian Library Association Conference at Zaria, April 2–5, 1965, the theme of which was "Libraries at Work."

NORTHERN STATES DIVISION

With the coming of the 12-state structure in Nigeria, the Northern Nigeria Division became the Northern States Division. The change was reflected in the change of title of its publication, which became the *Northern States Library Notes*.

The Northern States Division came into existence at approximately the same time as a Department of Library Science developed in the Northern States at Ahmadu Bello University. Its programs reflected the overriding interest in education for librarianship and—additionally—a strong interest in the development of school libraries and training for school librarians.

At the annual conference of the division held at the Institute of Administration on February 28, 1970, it was agreed that any states wishing to form a separate division might do so at any time provided the executive of the Northern States Division was informed through its secretary/treasurer. At this conference approval was given to Benue-Plateau State to have a separate division (*38*).

School Library Association (Northern States)

The School Library Association (Northern States) was formed in 1967 at the Institute of Education, Ahmadu Bello University, Zaria, following a workshop for teacher-librarians and library clerks. The 1970/71 *Annual Report* of the Nigerian Library Association states, "By the organization of short courses and workshops, it significantly filled the gap created by the dormancy of the then Northern Division of the N.L.A. in 1966, 1967 and part of 1968" (*39*). During its weekend conference, August 15–16, 1970, it adopted a constitution and launched a *Newsletter* (*40*). Its first chairman was Mallam Mu'azu Wali, librarian, Institute of Education, Ahmadu Bello University. It forms a part of the present School Libraries Section of the Nigerian Library Association.

BENUE–PLATEAU STATE DIVISION

The first state in the former Northern Division to form a separate State Division was Benue-Plateau. It was launched September 1969 (*41*) and held its first Annual General Meeting September 16, 1970, attended by 20 registered members. Its first officers were Mr. P. O. Unoogwu, state librarian, Benue–Plateau State, chairman; Mr. J. A. Shindi, vice-chairman and editor; and Mr. P. A. Oko, secretary/treasurer. The division publishes a newsletter, *Benue–Plateau State Library Post*.

It was the host of the 1971 Nigerian Library Association Conference, the theme of which was "Libraries in the New National Structure."

WESTERN DIVISION

The Western Division of the Nigerian Library Association succeeded the Ibadan Branch of the Nigeria Division of the West African Library Association, which held its last formal meeting, attended by 29 members, on April 5, 1962 (*42*). The newly constituted division hosted the Inaugural Conference of the Nigerian Library Association. The 1964/65 officers of the division were Mrs. F. Adetowun Ogunsheye, chairman; D. Agidee, vice-chairman, V. A. Williams, honorary secretary/treasurer; and Mrs. T. O. Odeinde, assistant honorary secretary (*43*). The division published the Western Division *Newsletter* in continuation of the *Newsletter* launched by the former Ibadan Branch of the West African Library Association. In 1966 the division inaugurated the *Western Nigeria Library Bulletin*. The division sponsored, in May 1965, a revision course for library assistants preparing for the summer series of the U.K. Library Association's entrance examination; in July, a workshop on library techniques for local council librarians; and in August 1965, a course for teacher–librarians.

WESTERN STATE DIVISION

The Western State Division succeeded the Western Division when the new 12-state structure was introduced in Nigeria in 1967. The division played the unique role of hosting the only conference of the national association to be held during the Civil War. The theme of this conference, held September 13–15, 1968, was "New Developments on the Nigerian Library Scene." At that time Mrs. F. A. Ogunsheye, now head of the Department of Library Studies, University of Ibadan, was acting president of the Nigerian Library Association. The division has shown itself active in publicizing the profession through radio and TV appearances by members. It serves as a pressure group on government in support of the promulgation of a State Library Edict and the improvement of school library service. It publishes the *Western Nigeria Library Bulletin*. The division was the host of the 1973 annual conference of the Nigerian Library Association, the theme of which was "Service Concepts of Libraries."

MID-WEST STATE DIVISION

The Mid-West State Division was inaugurated in Benin in late 1972. Mr. J. E. Esezobor, ag. librarian, University of Benin, was elected chairman; P. M. Umunna, vice-chairman; and Yakubu Izevbekhai, secretary. Mrs. R. V. D. Wright became treasurer; Mr. Asudo, publicity secretary; and Mrs. Ngozi Ene, editor.

The division has appointed the following three committees to deal with its management and organization: Membership, Publications, and Conferences/Seminars/Workshops (*44*). Its members have focused their efforts on development of the newly formed public library services, which combine an innovative service to schools and the development of the university library services. Before the division was formed its members were instrumental in the promulgation of the Mid-West Library Board Edict, 1970.

The Mid-West State Division played host to the 1974 annual conference of the Nigerian Library Association, December 2–5, 1974, the theme of which was "Toward Scientific Management in Nigerian Libraries."

Legislation and Standards

The members of the association have played active roles in the enactment of the following library legislation in Nigeria:

Eastern Nigeria Library Board Law, 1955
Superseded by
East-Central State Library Board Edict, 1971
Rivers State Library Board Edict, 1971
South-Eastern State Library Edict, 1973
National Library Act, 1964
Superseded by
National Library Decree, 1970
Midwestern Library Board Edict, 1970

The association officially works for library legislation in all states of the Federation.

Standards for school libraries were issued by the Ministry of Education, Eastern Nigeria, in January 1966, upon the initiation of the Eastern Nigeria School Libraries Association. Following the Civil War, the East-Central State School Libraries Association was instrumental in advising the Ministry upon the formulation of the Minimum Standards for School Libraries in the East-Central State, September 1973.

LEGAL RECOGNITION OF THE ASSOCIATION

A draft decree for the creation of a Nigerian Council for the Library Profession was drawn up and forwarded to the Federal Military Government and the state governments in 1973, and a legal draft was under consideration in 1975.

CAREER AND SALARY STRUCTURE FOR LIBRARIANS

The association has submitted memoranda on conditions of service for librarians to the following:

1. The Grading Team on the Grading of Posts in the Public Services of the Federation of Nigeria, April 1966 (Chairman: T. Elwood)
2. The Adebo Salaries and Wages Review Commission, 1970
3. The Public Service Review Commission, 1972–1974 (Chairman: Chief Jerome Udoji)

The association has been instrumental in the enactment of a scheme of service for library staff in the Federal Public Service (see Federal Government Estimates 1972/73 and Establishment Circular on "The Integrated Library Service"), the Western State (Western State of Nigeria Ministry of Establishments Circular No. T/E.2085/157 of October 13, 1970), and in the East-Central State (East-Central State Establishment Circular No. 19/1974). Similar schemes of service are coming into operation in most other states.

NIGERIAN LIBRARY ASSOCIATION REPRESENTATION ON OUTSIDE BODIES

A Federal Library Advisory Committee for Nigeria was established through the efforts of the Nigeria Division of the West African Library Association in 1960.

University College, Ibadan, and the Nigerian Division of WALA (*45*). This committee was active through 1964 and its main achievement was the establishment of the National Library. By 1965 it became defunct (*46*), the government having subsumed its functions under the National Library Board. The association, however, has continued to press for the reconstitution of this useful body.

The association is presently represented on:

1. Nigerian National Library Board
2. UNESCO National Commission for Nigeria
3. Nigerian National Book Development Council

MEMBERSHIP OF OUTSIDE ORGANIZATIONS

The Nigerian Library Association is a member of:

1. The Federation of West African Library Associations (WALA)
2. The Commonwealth Library Association (COMLA)
3. The International Federation of Library Associations (IFLA)

REFERENCES

1. WALA, *Minutes of the Annual General Meeting, 18 June, 1961*, p. 1.
2. N. O. Oderinde, "Our Professional Association, 1948–1968," *Nigerian Lib.*, 6(1&2), 69 (1970).
3. WALA, Nigeria Division, *Executive Committee Meeting Minutes, 9 November (1962)*, p. 1.
4. Nigerian Library Association, *Minutes of the Inaugural Business Meeting, Ibadan, 16–17 December, 1962*, pp. 1–2.
5. Nigerian Library Association, *Constitution*, p. 1.
6. Ref. *5*.
7. N. O. Oderinde, Ref. *2*, p. 103.
8. "Nigerian Library Association, Annual Report, September 1968–March 1970," *Nigerian Lib.*, 6(1&2), 109 (1970).
9. "Nigerian Library Association Annual Report, April 1971–March 1972," *Nigerian Lib.*, 8(3), 236 (1972).
10. Ref. *9*.
11. Nigerian Library Association, *Constitution*, p. 2.
12. Ref. *11*.
13. Ref. *11*, pp. 2–5.
14. Ref. *11*, pp. 5–6.
15. Ref. *11*, p. 6.
16. N. O. Oderinde, Ref. *2*, p. 83.
17. "Nigerian Library Association Annual Report, September 1968–March 1970," *Nigerian Lib.*, 6(1&2), 117 (1970).
18. Ref. *17*, p. 118.
19. Ref. *18*.
20. Letter from Oyeniyi Osundina, secretary, Nigerian Library Association, April 30, 1974.
21. "Nigerian Library Association Annual Report, April 1971–March 1972," *Nigerian Lib.*, 8(3), 231 (1972).

22. Ref. *21*, p. 223.
23. Ref. *21*, pp. 234–235.
24. "[Nigerian Library Association] Annual Report, 1966/67 & 1967/68," *Nigerian Lib.*, **4**(3), 9 (1968).
25. "Nigerian Library Association Annual General Meeting, March, 1966," *Nigerian Lib.*, **2**(1), 37 (1966).
26. "Nigerian Library Association Annual General Meeting . . . Permanent Secretariat Planning Committee Report," *Nigerian Lib.*, **6**(1&2), 126 (1970).
27. Ref. *26*, pp. 126–131.
28. "Nigerian Library Association Annual Report, April 1971–March 1972," *Nigerian Lib.*, **8**(3), 221 (1972).
29. "Eastern Nigeria Division, Nigerian Library Association, Inaugural Conference," *Nigerian Lib.*, **1**(1), 53 (February 1964).
30. Dorothy S. Obi, "Libraries and Librarianship in the East Central State of Nigeria," unpublished manuscript, 1973, pp. 9–10.
31. "Formation of the East Central State Division of the Nigerian Library Association," Enugu, May 3, 1971 (mimeographed circular).
32. Nwozo Amankwe, "An Address by Mr. Nwozo Amankwe, Chairman, E.C.S. Division of the NLA During the Launching of the Division, on August 13, 1971," unpublished Conference Paper, p. 4.
33. "Nigerian Library Association, Annual Report, April 1971–March 1972," *Nigerian Lib.*, **8**(3), 222 (1972).
34. John Harris, "Presidential Address," *WALA News*, **3**(3), 104 (1959).
35. "[Nigerian Library Association] Annual Report, 1963/64," *Nigerian Lib.*, **1**(3), 139 (1964).
36. "Northern Divisional Activities," *Nigerian Lib.*, **1**(1), 38 (1964).
37. "Nigerian Library Association, Northern Division, Annual Report for 1963/64," pp. 1–2.
38. "[Nigerian Library Association] Annual Report, September 1968–March 1970," *Nigerian Lib.*, **6**(1&2), 114 (1970).
39. "Reports from Sections and Divisions," *Nigerian Lib.*, **7**(3), 158 (1971).
40. Ref. *39*.
41. "[Nigerian Library Association] Annual Report, September 1968–March 1970," *Nigerian Lib.*, **6**(1&2), 112 (1970).
42. "Association News: Branch Notes," *WALA News*, **4**(3), 122 (1961).
43. "[Nigerian Library Association] Annual Report, 1964/65," *Nigerian Lib.*, **1**(4), 194 (1965).
44. "News from Divisions," *NLA Newsletter*, No. 24/25, 9–10 (April/May 1974).
45. John Harris, "Presidential Address," *WALA News*, **3**(3), 105 (1958).
46. "[Nigerian Library Association] Annual Report, 1964/65," *Nigerian Lib.*, **2**(1), 42 (1966).

DOROTHY S. OBI

NOISE

As late as 1964, the American version of the English language as recorded in the Third Edition of *Webster's International Dictionary* (*1*) recognized that *noise* could be silent, for example, "snow" on a television screen. But the editors of this dictionary limited the concept of such silent "noise" to an electronic communication system. Their definition 2(c) reads:

> an unwanted signal that enters an electronic system . . . or is created in it and tends to interfere with the desired signal. . . .

In order to correctly portray current usage, we must broaden this definition by removing the adjective *electronic;* enlarge the meaning of *signal* to include, inter alia, "any occurrence or response in the operation of the system"; and amplify *unwanted* to include: "nonpertinent—or at least low-pertinent." To restate then, the present meaning of noise should read:

> Noise is a nonpertinent, or low-pertinent, occurrence or response which either enters into, or is created within, a communication system, and which tends to interfere with a desired occurrence or response.

The *jargon* for noise in a communication system of the document storage and retrieval type is *false drop.* In the early history of such systems, coded documents were represented by Hollerith Cards in which the coding for the document was punched. Punched card sorters were then programmed to separate those cards which represented the desired documents by dropping them into specified pockets. A card representing an unwanted document found among the cards representing the wanted documents constituted a false drop. Unfortunately this term is sometimes misapplied to low-pertinent responses. The justification for this misuse of the term is that *relevance* is a continuum, hence there is no exact cutoff between nonpertinence and low-pertinence.

Indexes or codes for document storage and retrieval systems may be well designed in many subject matter areas and yet be weak in one or more additional areas. Nor can their design invariably keep pace with scientific and technical advancement in all subject matter areas. Thus in time, an exceedingly well-designed system may deteriorate into an inadequate one. It is also unlikely that the design of any system will produce excellent results for all classes of users in any one field. Systems designed for a single group of users are invariably more accurate and efficient than those designed for a diverse group of users. Moreover, the printing or other reproduction of the designed system may introduce outright errors in the record.

Even in a well-designed system for a very specific group of users, there will be some nonspecific, broad, general searches made. Because of the breadth of such searches, a large number of nonpertinent and low-pertinent documents will inevitably be delivered. And in cases where a browsing type of search is made, the searcher deliberately wants a noisy search, since he is essentially on a fishing expedition. The indexer or coder may also introduce noise by misinterpreting the system, or by an error in recording the index or code. Or, when assigning an index or code to the document, he may select a less than ideal term. The same mistakes can be made when indexing or coding a question.

A complete analysis of all considerations leads to the conclusion that noise can occur from:

1. Poor or inadequate design of the coding or indexing system.
2. Outright errors in:
   a. The coding or indexing system.
   b. The assignment of a code or index to a document in the storage media.
   c. The assignment of a code or index to a question being searched.

3. Poor or inadequate assignment of a code or index to:
   a. A document in the storage media.
   b. A question being searched.
4. Poor or inadequate strategy in the search process.
5. A malfunction in:
   a. The operation of a mechanized system.
   b. The mechanism itself.
6. A combination of two or more of these causes.

The number of false drops constitutes a negative measure of search efficiency. Consider a store of T documents which have been searched for a question, and from which t documents have been delivered. An independent analysis of the entire store of T documents shows that R documents are relevant to the particular search, and of these R documents, r documents are found in the group of delivered documents t. The measure of noise, known as the *Noise Ratio* (or sometimes as the *Noise Factor*) is:

$$(t-r)/t$$

Two other ratios of efficiency associated with Noise Ratio are:

$$r/t$$

known variously as *Relevance, Pertinency,* or *Precision;* and

$$r/R$$

known either as *Recall* or *Sensitivity.*

At least one authority in this field (2) has indicated that noise includes the relevant documents in the store which are not recovered! That is, he would include the expression $R-r$ documents in measuring noise, so that his definition would be

$$(R-r) + \frac{t-r}{t}$$

Brian Vickery mentions two classes of noise (*3*):

1. *Engineering Noise,* defined as "mistakes in coding by human agents, errors in machine operation or false combinations deliberately allowed in machine operations, false combinations deliberately allowed in the design of the system."
2. *Semantic Noise,* defined as "an entry bearing terms related to the *sought* terms . . . found to be not relevant."

Noise in the electronic communication systems sense, as defined by Webster's (supra), when occurring in an analog record, can be sharply decreased or even eliminated. This can be accomplished by first digitalizing the analog record while simultaneously ignoring or filtering out the lower analog amplitudes where the bulk of the noise is located, and then returning the signal to analog form, with or without amplification. Further enhancement, after amplification, can be accomplished by iterating the process one or more times. This technique has been used to purify and enhance both audible and visual productions from a record. For example, background noise in a recording studio and needle noise when re-recording an old record have both been successfully lowered (or almost completely eliminated) from a record or tape of previously recorded music works; and video pictures from outer space have likewise been more clearly defined. Computer programming is the latest method of digitalizing the records and returning them to analog form. It is clear that this same process can be applied to other communication systems such as tapes used in document storage and retrieval systems.

REFERENCES

1. Philip Babcock Gove, editor in chief, *Webster's Third New International Dictionary of the English Language, Unabridged*, 3rd ed., G. & C. Merriam Co., Springfield, Mass., 1964.
2. Mortimer Taube and Harold Wooster, eds., *Information Storage and Retrieval: Theory, Systems and Devices*, Columbia Univ. Press, New York, 1958, p. 12, definition No. 2.
3. Brian C. Vickery, *On Retrieval Theory*, Butterworths, London, 1961, p. 140.

SIMON M. NEWMAN

NONCONVENTIONAL TECHNICAL INFORMATION SYSTEMS IN CURRENT USE (NTISCU)

During the 10-year period between 1957 and 1967, the National Science Foundation (NSF) issued four editions of a report with the title *Nonconventional Technical Information Systems in Current Use*. (In Edition No. 4, the words "Scientific and" were inserted before the word "Technical" in the title.) The purpose was to publicize new retrieval methods that were actually in operation. Another NSF report series described new documentation methods, including retrieval as well as mechanical translation and other linguistic and lexicographic research, that were in a research or a development stage. The title was *Current Research and Development in Scientific Documentation* and 15 editions of the report appeared between 1956 and 1970. (See review by Harold Wooster, this encyclopedia, Volume 6, pp. 336–365.)

The *Nonconventional* series was started because some members of the NSF Office of Scientific Information became seriously concerned with the problem of determining, among the many reported innovations, which were being planned and which were in actual operation. Apparently the optimism of innovators, which may be an essential characteristic if they are ever to accomplish anything new or different, tends to blur the distinction between wish and reality in accounts of their own work. Therefore, it often was, and still is, difficult to determine whether things-to-come were being predicted, or if things-that-really-are were being reported.

So, in 1956 NSF decided to publish a report that would be more than a directory, actually a compendium of examples of new retrieval methods that had been determined to be in actual operation. The NSF staff member responsible was Mrs. Madeline M. Henderson, formerly Miss Madeline M. Berry. She was in charge of the first two editions of NTISCU and a consultant on No. 3. Mrs. Henderson was also responsible for starting the sister series of NSF reports, *Current Research and Development in Scientific Documentation.* The two series were initiated under Dr. Alberto F. Thompson and were continued in the 1960s by Dr. Burton K. Adkinson, who became the head in 1959 of the NSF Office of Scientific Information. Both series were terminated in the late 1960s, presumably because of economic considerations. Few possible successors have appeared for NTISCU, except in 1971 the *Encyclopedia of Information Systems and Services,* edited by Anthony T. Kruzas.

The crucial adjective in the title, "nonconventional," was deliberately selected, in preference to such words as "automated" or "mechanized," to emphasize the broadness of the definition of new or innovative methods. The word nonconventional was meant to embrace both equipment and nonequipment types of innovation. As the Introduction to the first edition states:

> It consists of descriptions of technical information systems, currently in operation, embodying new principles for the organization of subject matter or employing automatic equipment for storage and search (p. v, 1st ed.).

An analysis of the four editions should provide a perspective on a field less than three decades old. Since NTISCU only publicized systems that were in operation, an analysis of the described systems should aid in determining how nonconventional, or new, retrieval methods actually developed in the United States.*

There are many questions that might be asked. Was the application of new methods subsidized by the federal government? Were large organizations in the vanguard of innovation? Was the main impetus for developing new methods the new types of unpublished documents containing scientific and technical subject matter? An unequivocal "yes" can be given only to the last question.

Finally an analysis should also contribute to the discussions of the theory or the definition of a new field that has been variously called "documentation"/ "information retrieval"/"information science," names popular pre-1950, around 1950, and post-1959, respectively. Many experts in the field, even theoreticians, confess in print that they are not sure how to delimit, to distinguish what is unique, if anything, in the field. Luckily practitioners know how to do something long before the work can be or has been systematically described or explained. Most experts, when given examples, can state which belong in a particular field and which do not.

* I assume, as did Harold Wooster in evaluating the other NSF series, that the systems described represent a good sample of the total universe, in this case of new retrieval systems actually in operation in the United States during the 10-year period. In the 1950s, the field was small and desperately trying to grow, so was glad to include anyone. By the 1960s the field had become prestigious and everyone wanted to be included.

The first edition in the series was published in January 1958 and consisted of 43 pages and no index. Thirty systems located in 25 organizations were described. By the final edition, No. 4, which appeared in December 1966, there were 558 pages and eight indexes. A total of 178 systems located in 141 organizations were described, one more system than all in the previous three editions.

The system descriptions, "which had been approved by the organizations involved" (p. v, No. 1), were first presented as prose chronicles. However, by Edition No. 3, there was a systematic checklist to be followed by respondents; and in No. 4, there was a detailed questionnaire (see Table 1).

The arrangement of system descriptions in the first edition was alphabetic by name of the organization in which a system was located. The Introduction conceded the importance of equipment by classifying the systems as:

(1) Manual systems employing *aspect* cards—one card per indexing term (e.g., Uniterm or "peek-a-boo" systems).
(2) Mechanized systems employing aspect cards (e.g., *coordinate indexing* systems used with punched-card equipment or computers).
(3) Manual systems employing item cards—one card per item, which may be a document or section of a document (e.g., Keysort systems).
(4) Mechanized systems employing item cards (e.g., *Zator* systems, indexing systems used with punched-card equipment or computers) (p. v, 1st ed.).

In Edition No. 2, the Supplement to No. 2, and No. 3, the system descriptions were arranged in three sections depending on the purpose of the system:

I. Those that (which*) store references.
II. Those that (which*) store data.
III. Those used to produce indexes.

The distinction was between the systems that provide searches upon request for document references or other data, and those systems that produce indexes that can be searched by an individual for references or data.

"Data" was explained for Section II systems:

> In these systems, information and facts themselves are stored; searches result in tabulations of data or reports that summarize the data (p. v, No. 2).

Examples of data that appeared in the series were names or structures of chemical compounds, physical properties of materials, and names and affiliations of individuals involved in research projects.

In Edition No. 4, the arrangement of descriptions was changed from one based on purpose to one that emphasized equipment. The five main divisions were manual, tabulating or peek-a-boo cards, computers, and photographic equipment. The largest division in No. 3, Section I, "Systems Which Store References," had also been subdivided "according to the extent to which the system is mechanized" (p. xvii, No. 3).

* A grammatical improvement (?) made in Edition No. 3.

TABLE 1

Development of the Organization of the System Descriptions

	Page or Section				
	No. 1[a]	No. 2[a]	Suppl.[a]	No. 3[b]	No. 4[b]
Table of Contents	iii	iii–iv	iii	iii–vi	iii
Guide to Organizations				vii–ix	v–xi
Introduction	v	v–vi	v–vi	xi–xiii	xiii–xv
Sample Checklist with Definitions		vii–viii	vi–viii		
Checklist for System Descriptions				xv–xvi	
The System Description Form					xvii–xxvii
Organization of the Report				xvii–xx	xxix–xxx
(Alphabetically by name of organization)	1–43				
I. Systems That Store References		1–42	1–26		
I. Systems Which Store References				1–124	
II. Systems That Store Data		45–56	27–37		
II. Systems Which Store Data				125–162	
III. Systems Used to Produce Indexes		59–63	39–42		
III. Systems Which Produce General Search Aids				163–194	
1. Manual, Uniterm, Edge-punched and Interior-punched Card Systems					1–41
2. Tabulating Card Systems					43–102
3. Peek-a-boo Systems					103–148
4. Computer Systems					149–476
5. Photographic Systems					477–483
Supplementary Guide to Individuals and Organizations				195–199	
Index of Individuals and Authors					484–494
Index of Geographical Locations				200–202	514–521
Subject Guide		65–66	43–44	203–209	
Classified Equipment Index					495–502
Alphabetic Equipment Index					503–509
System Size Index by size of document collection					510
System Size Index by size of indexing terminology authority					511
List of Acronyms					512–513
Alphabetical Subject Index					522–558

[a] Systems referenced by page numbers.
[b] Systems referenced by numbers of section(s) and article description separated by periods.

An innovation in Edition No. 3 was the "Checklist for System Descriptions" of two pages (pp. xv–xvi). After a "General" section, the Checklist was divided into two main sections, "Input and Storage" and "Search and Output." The first followed the processing of documents into a system and the second followed the processing of a request for a search, or the preparation of a printed search aid. This division served usefully to differentiate among personnel, records, procedures, and equipment that were involved in each of the main processes.

In Edition No. 4, there was an elaborate 11-part questionnaire of nine pages, originally legal size, entitled "The System Description Form" (pp. xviii–xxvii, No. 4). The commercial contractor for Edition No. 4, Herner and Company of Washington, D.C., generated new terminology for the report, principally "query services" and "nonquery services." The distinction is again the one between searches performed upon request and searches performed by individuals with search aids.

Unlike No. 3, all equipment was unfortunately listed in one place, Part II, "General Description of the System," so it is often difficult to determine the process(es) being performed by a particular piece of equipment. Like No. 3, statistics were all listed in one place, and these numbers were sometimes in conflict with numbers given elsewhere in the descriptions.

A noble attempt was made in Edition No. 4 to limit the scope of any one description to a single system by defining an "Information System."

> An Information System is defined as the combination of (1) a body of documents or information units or sources, (2) an index to it, (3) a method or mechanism for searching or otherwise manipulating the index, and (4) a method for printing out or otherwise displaying the results of searches or other index manipulations. Where systems operated by an organization differ in regard to any of the foregoing elements, they should be treated as separate entities, and each should be described via a separate questionnaire (p. xiv, No. 4).

The last sentence was unfortunate. Who would be willing to fill in more than one copy of a long and complex questionnaire? The answer was 18%, or 26 of the 141 organizations. The number of organizations that obviously compressed descriptions of more than one system into a single description was 11.

From an analysis of the media for index storage and indexing methods that were reported, it often seemed that more than one "Information System" was being described, but just as often it was hard to be sure. Some respondents apparently thought that a system could contain more than one kind of subject index. Possibly some of the indexing systems were extremely complicated and facilitated different kinds of subject searches.

During the 10-year period the reports were issued, the coverage grew from 30 systems in 25 organizations to 178 systems in 141 organizations. This is shown in Table 2. The table also shows that nearly the same number of descriptions were reported in Edition No. 4, 178, as were reported in the three previous editions and one supplement combined, 177.

From the beginning, multiple new retrieval systems in one organization were typical of the field. (Both name and location of an organization were considered in determining whether one organization reported more than one system.) From five organizations with two systems each in the first edition, they grew to 21 systems

TABLE 2

Number of Systems and Organizations Which They Serve, Including Those Appearing in More Than One Edition

Edition	Systems	Also appeared in Edition:	Organizations	Organizations with two systems	Organizations with three or more systems
No. 1	30	—	25	5	0
No. 2	37	No. 1: 19	32	5	0
Suppl.	21	No. 2: 2	18	1	1 with 3
Subtotal, No. 2 plus Suppl.	58	21	50	6	
No. 3	89	No. 1: 21; No. 2 + Suppl.: 49	73	6	3: 2 with 3; 1 with 7
No. 4	178	No. 1: 4; No. 2 + Suppl.: 9; No. 3: 29	141	21	7: 6 with 3; 1 with 5
Total	355		289	38	11

with two systems each in Edition No. 4. The highest number of systems in one organization, seven, was reported in Edition No. 3 (E. I. du Pont de Nemours & Company). The next highest number in one organization, five, was reported in Edition No. 4 (Battelle Memorial Institute). Evidently, once a nonconventional system was installed in an organization, the probability was good for more to appear in the same organization.

Only four of the same systems appeared in both the first and fourth editions. One was governmental, the Cancer Chemotherapy National Service Center of the National Institutes of Health. The other three were commercial organizations, namely, the Ethyl Corporation, National Lead Company, and Smith, Kline & French Laboratories. Only the last organization employed computer equipment.

Although some systems were reported to have been terminated, the main reason for changes in inclusion in the series was that the definition of "nonconventional" kept changing during the 10-year period. As was reported in Edition No. 3:

> An attitude toward Uniterm systems as expressed by one of the contributors was that "they were no longer nonconventional" (p. 8, No. 3).

A number of interesting conclusions can be reached from an analysis of the statistics on the sizes of the document collections, as recorded in Tables 3 and 4.

First in importance is the conclusion that the majority of systems reported small collections of less than 25,000 documents. Specifically:

> Nearly 80%, or 18 of 24 systems reporting size in the first edition.
>
> Nearly 70%, or 38 of 55 systems in Edition No. 2 and Supplement.
>
> Nearly 60%, or 52 of 88 systems in Edition No. 3.
>
> Nearly 50%, or 83 of 157 systems in Edition No. 4.

The trend during the 10-year period is toward larger document collections, but the trend is slow. It is slow in spite of the greater visibility of larger systems, and so the greater probability they would be included in the series.

The second important conclusion is that a minority of systems reported collections of more than 100,000 documents. Specifically:

> Less than 10%, or 2 of 24 systems reporting in the first edition. (Largest system reported 300,000 documents.)
>
> More than 10%, or 6 of 55 systems in Edition No. 2 and Supplement. (Largest system reported 400,000 documents.)
>
> Less than 10%, or 8 of 88 systems in Edition No. 3. (Largest system reported 640,000 documents.)
>
> More than 25%, or 39 of 157 systems in Edition No. 4. (Five largest systems reported over a million documents.)

So, a total of 55 systems in all editions reported collections of more than 100,000 documents, but 39 of these, or more than 70%, were reported in Edition No. 4.

TABLE 3

Sizes Reported of Collections of Systems

Edition	Unknown	Less than 2,500	2,500–4,999	5,000–9,999	10,000–24,999	25,000–49,999	50,000–99,999	100,000–499,999	500,000–999,999	More than 1 million	Grand total
	6	2 (smallest 1,500)	1	7	8	3	1	2 (largest 300,000)	0	0	30
No. 2	3	6 (smallest 800)	3	4	10	7	1	3 (largest 200,000)	0	0	37
Suppl.	0	3 (smallest 500)	3	5	4	2	1	3 (largest 400,000)	0	0	21
Subtotal, No. 2 plus Suppl.	3	9	6	9	14	9	2	6	0	0	58
No. 3	1	9 (smallest 700)	11	20	12	16	11	8 (largest 640,000)	0	0	88
No. 4	21	23 (smallest 150)	15	9	35	21	15	28	6	5 (largest 7,500,000)	178
Totals	31	43	33	45	69	49	29	44	6	5	355
		190				78		55			

TABLE 4

Yearly Growth Rates Reported of Collections

Edition	Unknown	0–500	500–2,000	2,000–5,000	5,000–10,000	10,000–25,000	More than 25,000	Totals
No. 1	13	1	6	4	1	5	0	30
						(largest 17,000)		
No. 2	8	3	4	6	6	9	1	37
						(largest 48,000)		
Suppl.	0	4	3	7	2	2	3	21
Subtotal, No. 2 plus Suppl.	8	7	7	13	8	11	4	58
						(largest 420,000)		
No. 3	5	10	25	15	18	11	5	89
						(largest 225,000)		
No. 4	40	19	24	26	26	19	24	178
						(largest 708,970; only 1 above 500,000)		
Totals	66	37	62	58	53	46	33	355

Less than 10%, or five systems, reported over 1 million documents and all five were reported in Edition No. 4.

In contrast, there were 76 systems in all editions that reported collections of less than 5,000 documents. Half of these, 38, were in No. 4, including the smallest system of all. It was the Survey Center of the University of California at Berkeley with 150 documents.

Furthermore, the rate of yearly growth of collections that was reported by the systems, as displayed in Table 4, is also not large. For instance, more than half of all systems in the four editions, 181 out of 355 systems, reported adding less than 5,000 documents a year to collections.

About 62%, or 11 of 17 systems reporting growth in first edition.
About 55%, or 27 of 50 systems in Edition No. 2 and Supplement.
About 60%, or 50 of 83 systems in Edition No. 3.
Exactly 50%, or 69 of 138 systems in Edition No. 4.

At the other extreme, less than 10%, or 33 of all 355 systems, reported adding more than 25,000 documents a year. However, 75% of these, or 24, were reported in Edition No. 4.

0% reported in first edition.
8%, or 4 of 50 systems in Edition No. 2 and Supplement.
6%, or 5 of 83 systems in Edition No. 3.
17%, or 24 of 138 systems in Edition No. 4.

The largest yearly growth rate was reported as 708,970 documents, by the University of Tulsa, Oklahoma, in No. 4. It was the only system that reported adding over 500,000 documents yearly. Again the trend seems to be toward larger collections but it is slow. So much for the myth that the large size of document collections was one of the main motives for developing "nonconventional" methods. In fact, the opposite seems to be the case. Apparently it was in small collections that new retrieval methods were needed and where experiments were possible.

The nonconventional systems reported in the four editions were located mainly in commercial organizations, as is shown in Table 5. The majority, 60%, or 172 of the 289 organizations, were commercial enterprises. Only 15%, or 44 of the 289 systems, were in nonprofit organizations, largely academic institutions. Finally, 25%, or 73 of the 289 systems, were in governmental organizations. They were U.S. federal organizations except for two. The two exceptions were a French national organization and a U.S. metropolitan organization.

Obviously it was commercial organizations in the 1950s that pioneered the use of new retrieval methods in small collections. New methods were needed and it was possible to experiment in small collections. As usual, commercial companies pioneered because of their own immediate needs and interests.

In the 1960s, a trend is discernible toward more governmental organizations, especially among the 55 larger systems with collections of over 100,000 documents.

TABLE 5

Kinds of Organizations in Which Systems Were Located

Edition	Commercial	Nonprofit	Governmental	Totals
No. 1	20	0	5	25
No. 2	22	4	6	32
Suppl.	11	3	4	18
Subtotal, No. 2 plus Suppl.	33	7	10	50
No. 3	42	9	22	73
No. 4	77	28	36	141
Totals	172	44	73	289

The trend is displayed in Table 6. There were nearly as many governmental, 21, as commercial, 26, organizations. Only 18 systems were located in nonprofit organizations. In Edition No. 4, the numbers tripled for governmental and nonprofit organizations. Only two organizations that had reported in a previous edition, No. 3, were among the 39 larger systems reported in No. 4, namely, the Defense Documentation Center and the National Library of Medicine.

Another view of the development of nonconventional systems is provided by an analysis of the subject areas reported for the collections, as shown in Table 7. The dominant fields were scientific and technical, with chemical- and biological-related topics in the great preponderance.

61%, or 19 of 30 systems in the first edition.

35%, or 21 of 58 systems in Edition No. 2 and Supplement.

52%, or 46 of 89 systems in Edition No. 3.

36%, or 64 of 178 systems in Edition No. 4.

TABLE 6

Kinds of Organizations with Collections of 100,000 Documents and More

Edition	Commercial	Nonprofit	Governmental	Totals
No. 1	2	0	0	2
No. 2	2	0	1	3
Suppl.	2	1	0	3
Subtotal, No. 2 plus Suppl.	4	1	1	6
No. 3	3	1	4	8
No. 4	17	16	6	39
Totals	26	21	8	55[a]

[a] See Table 3.

TABLE 7

Subject Areas Reported of Collections

Edition	Chemical, biological	Engineering	Medical	Science in general	Social sciences	Total
No. 1	19	5	6	0	0	30
No. 2	16	11	10	0	0	37
Suppl.	5	6	8	2	0	21
Subtotal, No. 2 plus Suppl.	21	17	18	2	0	58
No. 3	46	20	13	7	3	89
No. 4	64	42	29	30	13	178
Totals	150	84	66	39	16	355

As a whole, 42%, or 150 of the total 355 collections were devoted to chemical- and biological-related subject matter.

The next most popular subject was engineering. As a whole, 24%, or 84 of the 355 collections, involved engineering topics. The next subject area in size was medical, with 19% or 66 of the 355 collections. The two other subject areas reported were science in general, 39, and the social sciences, 16. The majority of these were reported in the 1960s.

The reasons for the early and continuing predominance of retrieval systems for chemical and biological subjects are well known. These subjects deal with a huge number of individual objects that must be uniquely labeled and can be characterized in many ways.

As was to be expected, unpublished types of documents predominated in the nonconventional systems. In fact, the greatest number of collections limited to one type of document, 72%, or 89 of the 124 collections so limited, were those involving laboratory records and internal technical reports. This is displayed in Table 8. The distinction between external and internal technical reports was neither requested of respondents nor indexed in the series. However, the respondents frequently provided the information.

Interestingly, patents, 82, and correspondence, 81, were next most frequently present in the collections, after journal articles, 146, and books, 103. Many types of documents were specified in the questionnaire of No. 4 and many respondents checked all types, so the numbers are inflated, if anything.

The trend is toward collections with various types of documents in the same collection. Most of the types are usually found in research libraries. The more unfamiliar types are correspondence, engineering drawings, standards, and specifications.

The main kinds of searching equipment reported through Edition No. 3 were either manual or employed standard tabulating card equipment. The majority, 82%, or 145 of the 177 systems, were of this kind. This predominance is shown in Table 9.

TABLE 8

Types of Documents Reported in Collections

Edition	Laboratory records	Internal reports	External reports	Journal articles	Books	Patents	Corre-spondence	Trans-lations	Bibliog-raphies	Theses	Trade literature
No. 1	9 (6)[a]	18 (8)[a]	7	9 (3)[a]	5	4	1	0	0	0	2 (1)[a]
No. 2	6 (1)[a]	26 (13)[a]	11	13 (1)[a]	3	6 (2)[a]	4	1	1	0	4 (1)[a]
Suppl.	1 (1)[a]	8 (4)[a]	7	10	2	4	3 (1)[a]	1	1	1	0
Subtotal, No. 2 plus Suppl.	7	34	18	23	5	10	7	2	2	1	4
No. 3	22 (17)[a]	40 (12)[a]	31 (3)[a]	36 (1)[a]	18			3	1	2	1
No. 4	80 (17)[a]	12 (10)[a]	100 (7)[a]	78 (9)[a]	75 (1)[a]	45 (4)[a]	61 (1)[a]	52	43	39	34
Totals	118	104	156	146	103	82	81	57	46	42	41
	(42)[a]	(47)[a]	(10)[a]	(14)[a]	(1)[a]	(6)[a]	(2)[a]				(2)[a]

[a] Collections limited to one type of document.

TABLE 9

Equipment Reported in Systems for Search, or in Preparation of Printed Search Aids

	Manual equipment				Mechanized equipment					
Edition	Printed cards	Uniterm cards	Edge-notched cards	Optical coincidence cards	Simple sorters	Collators	Multi-column sorters	Computers	Photo-graphic	Totals
No. 1	1	5	4	1	7	2	8	2	0	30
No. 2	1	5	4	3	7	2	10	4	1	37
Suppl.	1	3	4	1	3	2	4	3	0	21
Subtotal, No. 2 plus Suppl.	2	8	8	4	10	4	14	7	1	58
No. 3	3	7	7	10	18	6	16	20	2	89
No. 4	6	6	4	18	10	7	6	118	3	178
Totals	12	26	23	33	45	19	44	147	6	355

In counting equipment for Table 9, each system was counted only once and according to the most complex types of searching equipment reported. The complexity of equipment follows the sequence from left to right in Table 9 and corresponds with the ranking of complexity of equipment used in the series. Excluded from consideration as search equipment are printers, such as Listomatic and GRACE (Graphic Arts Composing Equipment), and cards, such as aperture or Microcards—in favor of the equipment that directed them, whether manual or mechanized.

In the first three editions, there was a total of 60 systems which employed manual equipment, such as printed, Uniterm, edge-notched, or optical coincidence cards. Standard tabulating card equipment, such as the simple sorters like IBM-082 or IBM-083, was reported by 35 systems; and collators by 12 systems. Multicolumn sorters, mostly IBM-101s, were reported by 38 systems. Finally, only 29 systems, or less than 17%, reported using computers for searching purposes in the first three editions.

Even in Edition No. 4 about one-third of the systems reported the simplest types of equipment. A total of 34 systems reported the use of manual equipment, and 23 systems reported the use of simple sorters, collators, or multicolumn sorters. However, the reported use of all of these types of equipment decreased except that of optical coincidence cards. In contrast, 118 systems reported using computers for searching, or in preparation of printed search aids, such as announcement bulletins including permutation indexes, and indexes. The standard makes of computers were reported, with IBM equipment as usual in the majority.

By the mid-1960s, the computer had finally proved its worth as a retrieval device. There were at least three reasons for this success. These were the substantial increases in storage capacity, the substantial decreases in cost, and the proven compatibility to connect with printers and telecommunication devices, such as terminals.

Computers were most useful to the larger systems which had collections of 100,000 or more documents. Forty of the 55 larger systems used computers. Less important was whether the object being retrieved was document references, as it was in 75% of the total 355 systems, or whether the data retrieved were of other kinds.

The dominance of general purpose equipment is obvious throughout the 10-year period in the series. When first encountered, Uniterm and optical coincidence cards may seem unusual, but both represent variations on basically simple posting, punching, and sorting techniques. The best reason why general purpose equipment is so satisfactory for searching is that the main operation involved is the simple matching of bibliographic descriptions on a yes-or-no basis. Either it is determined that a record matches a specific record in a strictly prescribed manner, or it does not match it.

An analysis of the three most popular kinds of computer-printed search aids underscores the basic simplicity of the matching operation involved in searching. The first is the dual dictionary, an early example for chemical patents which was reported by Information for Industry in Edition No. 3. A dual dictionary consists of two identical alphabetic lists of index terms with the numbers of documents assigned the term posted in last digit order. The two lists are bound next to each other so that comparisons can be made of document numbers posted under any two indexing terms. The appearance of the same number under two indexing terms indicates that the referenced document was assigned both terms. Eleven dual dictionaries were reported in the four editions, with the majority of eight in No. 4, including one by Battelle Memorial Institute that did not use a computer.

In 1961, Hans Peter Luhn of IBM produced the first commercial permutation index of Key Word in Context, KWIC. It was *Chemical Titles* for the American Chemical Society and was reported in No. 3. From a total of three KWICs reported in No. 3, the number increased to 29 in No. 4. Permutation indexes consist of the multiple alphabetical listing of titles by each of the designated key words in the title. The rest of the title is printed around the key word in its original sequence, and is not permuted out of sequence.

Also in 1961, Hans Peter Luhn created Selective Dissemination of Information (SDI) systems. They were reported 41 times in Edition No. 4, but not elsewhere. "Profiles" of the current reading interests of individual users are formed with indexing terms and these are compared with "profiles" of current documents composed of assigned indexing terms. Individual users are notified of the existence of documents which have profiles that match their profiles.

Commercial organizations predominated in reporting KWIC and SDI systems. However, organizations reporting dual dictionaries were nonprofit at least half the time and often had smaller collections than the other computerized systems.

The final appearances are recorded of the famous equipment of the 1950s, specially designed for retrieval, with and without document copying devices. Among the multicolumn sorters specially designed for use with standard tabulating cards, the sole working descendant of the Universal Card Scanner of Hans Peter Luhn was reported in the Supplement to Edition No. 2, by the U.S. Air Research and Development Command. The working prototype had been introduced by IBM at the Diamond Anniversary Conference of the American Chemical Society in New York City in 1951. It was later designated the IBM-9310 sorter and searcher and was again reported by the renamed U.S. Air Force Systems Command in Edition No. 3 as still being used to search research contract descriptions.

The Continuous Multiple Access Collator (COMAC) of Dr. Mortimer Taube was reported being used in three different systems each by du Pont and Documentation, Inc., in Edition No. 2 and Supplement. In Edition No. 3, it was again reported by the same organizations, but by then the machine had been renamed the IBM-9900 SIA (Special Index Analyzer).

The U.S. Patent Office designed a multicolumn sorter very much like the IBM-101, the short-lived Interrelated Logic Accumulating Scanner (ILAS) reported in Edition No. 2. By Editions No. 3 and No. 4, the U.S. Patent Office was recommending and using the IBM-101 for the steroid search system.

The most famous names also appeared of the specially designed search equipment combined with document copying devices. They were usually counted in the column labeled "Photographic" in Table 9. They are the 1947 Rapid Selector of Vannevar Bush and Ralph R. Shaw, the 1952 Filmorex of Jacques Samain, the 1953 Microcite of the U.S. National Bureau of Standards, and the 1954 Minicard system of Eastman Kodak. Federal military agencies were the principal users of the equipment and reports can be found in Editions No. 2, No. 3, and No. 4.

These names should be permanent reminders of the repeated efforts in the 1950s to build the complete searching/copying machine to deliver instant document retrieval. For those interested in these "dinosaurs," the best references are Charles P. Bourne's 1963 book entitled *Methods of Information Handling* (Wiley, New York); and the U.S. National Bureau of Standards Technical Note 157, *Information Selection Systems Retrieving Replica Copies: A State-of-the-Art Report,* by Thomas C. Bagg and Mary Elizabeth Stevens, published December 31, 1962 (incorrectly printed as "1961"!). Other references can be found in the *Documentation Source Book,* by Gertrude Schutze (Scarecrow Press, New York, 1965).

The greatest difficulties were experienced in describing the subject indexing methods of the nonconventional systems. In the first indexes which appeared in Edition No. 2 and the Supplement, six choices were offered with some new and strange names. The most specific-sounding entries had the fewest references. "Descriptors with scope notes" had one reference to one system in No. 2. Also "Code chart" and "Coding outline" each had one reference to one system in No. 2.

"Subject codes" referenced two systems in the Supplement. "Classification schemes as basis for term lists" had references to two systems in No. 2 and two more systems in the Supplement. There was an encyclopedic entry, "Dictionaries, thesauruses, codebooks, etc.," that had the most references, 20 systems in No. 2 and 12 systems in the Supplement. Obviously the terminology had been taken from the descriptions furnished by the respondents.

In Edition No. 3, the difficulties of describing subject indexing methods were explicitly recognized and attempts were abandoned for complete coverage. A parenthetical note to the main heading in the index, "Terminological authority," stated:

> (most systems use dictionaries, glossaries, thesauri, codebooks, etc., and are not listed here. The indicated exceptions to this are given below: however, there appears to be considerable variation in the terminology used in denoting terminology authorities) . . . (p. 209, No. 3).

Below the main heading are listed five choices, again including three apparently specific ones, namely, "Classification . . ." with 12 systems referenced; "Descriptors . . ." with four systems referenced, although 10 systems had claimed to use descriptors; and "Code chart . . ." with three systems referenced.

The two new choices are "None or not pertinent" and "Nonsignificant words, lists of." The four systems referenced under the first entry are a curious group and do not justify the introduction of the new entry. First are two systems using chemical structure indexes, as reported by Monsanto Chemical Company and the U.S. Army Chemical Corps. The third system was reported by Battelle Memorial

Institute to be using "clue words." The fourth system was reported by Rocketdyne to be indexed for engineering data retrieval. Presumably all four respondents stated that "Terminological authority" was "None or not pertinent."

There were three clearly appropriate references to systems listed under "Nonsignificant words, lists of" in the index of No. 3. The systems included two KWICs, or permutation indexes, reported by Bell Telephone Laboratories, Inc. and the Lockheed Aircraft Corporation, and one text concordance reported by the Computation and Data Processing Center of the University of Pittsburgh. In all three systems, nonsignificant words were specified and the computer instructed to ignore them in the alphabetization of titles by each key word in a title, and of texts by each significant word in a text.

In Edition No. 4, the terminology reported by respondents was ignored. In Part IV, "Indexing Processes (other than coding)," of the questionnaire, the first choice listed as an indexing characteristic was: "Subject or concept terms, headings, or descriptors" (p. xxi). This capacious entry was inevitably the one most checked by respondents.

In the "Alphabetical Subject Index" of No. 4, some respectable library terms appeared for the first time in the series. Under "Subject classification" were listed references to 53 systems, and under "Subject headings" 86 systems were referenced. Also, attention was directed to the "Subject headings" entry from both the "Descriptors" and "Clue words" entries. However, none of the three systems claiming to use descriptors were referenced under the heading "Subject headings."

The remains of one of the great debates of the 1950s can be discerned in the terminology. The debate concerned the characteristics of the "descriptors" introduced in 1947 by Calvin N. Mooers. (See article by Calvin N. Mooers, this encyclopedia, Volume 7, pp. 31–45.)

Conclusions

The series accomplished its main purpose as a directory by publicizing examples of operating systems utilizing new retrieval methods for a 10-year period. The descriptions were more than adequate for finding out what was going on that might be new and different, and who was involved in the work.

One internal proof of the success was the change in the type of systems reported as the definition of "nonconventional" changed. The equipment described increased in complexity and size. Also the variety increased of the kinds of documents in collections. Another proof of success was the increase in the number of systems reported. In Edition No. 4, as many systems, plus one, were reported as the total of 177 systems reported in the previous three editions.

It must be admitted that inclusion in the series had prestige value. It was an excellent way to bring innovative work to the attention of colleagues as well as to the sponsoring agency, the National Science Foundation. The NSF was and still is one of the main sources of funds for supporting innovative work of this kind. It distributed many free copies of the reports to interested persons in the field.

As is commonly the case with directories of current interest, practitioners were the main audience. An indication that the reports were becoming less necessary to practitioners was the increasing number of references published elsewhere about the individual systems described in the series. For instance, 21 of the 28 systems with five or more references were in Edition No. 4, and this number included the system with the highest number of references, which was 21, reported by the American Society for Metals.

If the series failed as a compendium, it was because of the difficulties in describing nonconventional systems, especially subject indexing methods, and the difficulties of securing certain types of information. The first problem is still with us today. Both small- and large-scale innovative systems are difficult to describe.

Two important areas in which little information was provided by respondents were the costs of a system and the size of the index vocabulary. There was no cost data in the first edition, and in No. 4, 74% of the described systems lacked cost data. However, only 60% of the systems reported in Edition No. 2 and the Supplement lacked cost data, while only 50% did in No. 3. One lesson to be learned again is the sacredness of cost data in the real world. A second lesson is that more information was provided when respondents for No. 2 were merely asked for the total yearly cost for maintaining and operating a system (p. xv) than when respondents were queried in No. 4 as to "input costs, per document" and "searching costs, per search" (p. xix).

It is more difficult to account for the increasing lack of data on the size of the index vocabulary. Starting with a low of 20% of the systems not providing this information in the first edition, the percentages further declined to 10% of the systems in No. 2 and the Supplement, and to 12% in No. 3. However, the percentage of systems not providing this data in No. 4 rose to 45%. Certainly the general trends were toward larger index vocabularies and better record keeping by the systems that reported.

Another criticism possible of the series is that the number of systems reporting less than 2 years in operation increased from a high of 11 systems in the first three editions to 24 systems for No. 4. Eight of the 24 systems reported operation of less than 1 year, while no previous edition had reported any system of such a short duration. Even 2 years in operation cannot be considered substantial experience for an innovative system. Moreover, the number of systems reporting more than 6 years in operation decreased to 17% in No. 4, from 25% in No. 3.

However, in spite of all the difficulties and lacks of data, this analysis should have established that the series contains much rich historical material. In fact, the true history of innovative retrieval systems in this country has begun to emerge from this analysis. Another analysis (limited to Edition No. 4) is in a report prepared for the NSF Office of Information Service, "Characteristics of Information Systems as Revealed by an Analysis of Data in the National Science Foundation's Series *Nonconventional Scientific and Technical Information Systems in Current Use No. 4*," by Melvin J. Weinstock, Herner and Company, Washington, D.C., September 1967, PB 176 140.

The analysis has confirmed a number of generally held opinions. It has confirmed that new retrieval methods were mainly applied to documents with scientific and technical subject matter. It has confirmed that the main kinds of documents originally involved were not the usual published variety. They were typically technical reports and records intended mainly for internal use and, so, documents with a restricted distribution. Finally, the analysis has confirmed that a few new methods and products were developed by the nonconventional systems.

However, there were some surprises too. First and foremost was the predominance of small collections. There were only 55 collections in the total of 355 in the series that reported more than 100,000 documents, and only five of these systems reported more than 1 million documents. It was complexity of subject matter, not numbers of documents, that distinguished the collections of nonconventional systems.

Moreover, it was commercial organizations that for their own interests established most of the nonconventional systems. Of the 289 organizations which reported in the series, 60% were commercial, while only 25% were governmental and 15% nonprofit.

Finally, the history of special purpose equipment designed for retrieval work can be traced from its brave beginnings in the 1950s to its end in the late 1960s. General purpose equipment is usually capable of performing the matching operation on bibliographic descriptions as required for retrieval.

One major conclusion has been drawn from an overall view of the analysis of the series. It was that around 1965 the field of "documentation/information retrieval/information science" had crystallized into the structure that it still has today. In other words, little new seems to have been developed since 1965. The new methods already in actual operation in the 1960s have continued to be the main methods depended on in the 1970s.

The main proof was the operation of bibliographic computerized data bases with multiple new products and, in one case, as reported in No. 4 by Bolt, Beranek & Newman, with multiple users (time sharing on-line). Organizations that relied on computerized data bases included the Armed Services Technical Information Agency (now the Defense Documentation Center), the National Library of Medicine, and the National Aeronautics and Space Agency. The multiple new products well known today based on computer printouts include the KWICs and SDI systems. The sole exception to the comprehensive coverage was citation indexes, which did have a commercial start as *Science Citation Index* in 1964 but was not reported in the series.

The only successor to the series is the *Encyclopedia of Information Systems and Services*, edited by Anthony R. Kruzas. The publishers, Edwards Brothers, Inc. of Ann Arbor, Michigan, issued the first edition covering over 800 organizations in 1971 and the second edition in 1974, which doubled the coverage. It is a directory, in spite of its name, with brief one-page descriptions of more kinds of services and systems than NTISCU, but the main emphasis is still on innovation. As the system descriptions are presented in a standardized format, and as there are many indexes, it is easy to locate most desired information. This publication does not try to be a compendium.

LEA M. BOHNERT

NONESUCH PRESS

The definition of what constitutes a private press can produce much argument. It may be contended, inter alia, that a publishing organization cannot be regarded as a press if the printing of its books is not carried out within its own premises. Some people have difficulty in reconciling the publication of unlimited editions with private press activity, and if such factors are accepted as valid, then the Nonesuch Press cannot be considered as a private press. However, it is more generally agreed that if the work of a press is not for hire, if the choice of its publications is entirely a matter for its owner, then such a press may be regarded as private.

The Nonesuch Press meets these very basic requirements, but the prime importance of its work relates not so much to its fine books as to the way in which it interpreted the ideals of the British private press movement created by William Morris in the late 19th century and applied them to 20th-century methods of mechanized book production. Thus, for the first time, a private press demonstrated to the commercial publishing world in Europe and America that the highest standards of book design and production were not incompatible with a mechanized industry or with increased sales and higher profits. The excellent standard of trade book production in the Western world which is taken so much for granted today is a legacy of the pioneering work of the Nonesuch Press in the 1920s and 1930s.

Francis (later Sir Francis) Meynell was born in 1891 and grew up within an environment compounded of writing and printing. His father, Wilfred Meynell, was part-owner of the Westminister Press, a London printing office with a good reputation for typographic style and the quality of its machining. His mother, Alice Meynell, the poet and essayist, would rephrase a passage at the proof stage to ensure that her printer could impose well-balanced pages. His cousin, Gerard Meynell, was a cofounder in 1913 of *The Imprint,* a periodical with the aim of raising the standard of commercial printing.

Wilfred Meynell became managing director of Burns & Oates, the publishers, and Francis joined the firm as soon as he was old enough. By 1915 he was operating the Romney Street Press as a sideline—on his diningroom table—with rare permission to use some of the Oxford University Press Fell types. But only two books were published. In 1916 he left Burns & Oates to start his own Pelican Press, where he succeeded in making even jobbing printing attractive as well as effective. But in those early days he had not appreciated the essential requirement of typographical fitness for purpose: he once set a left-wing propaganda pamphlet in Cloister Old Face and surrounded it with a border of 17th-century fleurons. The Pelican's type specimen book, *Typography* (1923), was a most elegant production and also displayed Meynell's enduring regard for the decorative use of fleurons.

Meynell's sensitive feeling for the composition of carefully selected typefaces and his flair for layout were demonstrated beyond question before he was 30, but no publisher was prepared to entrust him with the production of a book; and it slowly became apparent that, if he were to print books to his own design, he needed to become his own publisher, free then to choose his own texts and design their production in his own style.

Support came from David Garnett, newly successful author of *Lady into Fox* and co-owner of Birrell & Garnett's bookshop; their tiny capital was provided by Vera Mendel, shortly to become Meynell's second wife; and the Nonesuch Press was established in 1923, in the basement of Garnett's shop in Gerrard Street, Soho, London. The editorial work was shared among the three, but naturally print design and negotiations with papermakers, printers, and binders was Meynell's domain—as was the writing of entertaining copy for the very attractive *Lists* and *Prospectuses*.

The device of the Press was adapted by Stephen Gooden from a scene in a tapestry now in the Victoria and Albert Museum, London. It had been produced for the Tudor Palace of Nonesuch. The device features two figures clasping hands—Meynell saw them as himself and Vera—in front of the palace. The name of the palace itself was taken as an afterthought, partly for the typographic allusion to a small size of type, nonpareil, and partly for the word's other sense of unequalled.

Earlier private presses had made use of the finest materials and had issued superb examples of book production as a handcraft but, as in the case of the Kelmscott Press, the results were not always readable. Moreover, their high prices tended to limit their purchase to collectors of rareties rather than to readers of texts. The first Nonesuch catalog made clear that its program would offer titles of significance, carefully selected because no other version was on the market, and skillfully edited. They would be offered in beautifully produced limited editions (with occasional unlimited exceptions), with illustrations of matching quality where necessary, yet at moderate prices. Costs were to be kept low by the exploitation of mechanical production methods under the stringent control of the designer.

By this time some of the commercial publishers (Chatto & Windus, and Methuen, for example) had begun to ape some of the great private presses and had acquired their own private type faces, while Dent was using title-page layouts and decorated endpapers which were obviously derived from the decorative style of the Kelmscott Press. But Meynell had no desire to use a limited number of personalized types or to restrict his book design by adopting a basic house style as most of the great private presses had done. He saw virtue in variety—of type faces and printers, of fine papers, methods of illustration, binding styles, and materials.

And fortunately for Meynell, The Monotype Corporation in London, under the guidance of Stanley Morison, was just beginning to issue excellent adaptations for machine composition of historic faces which had been admired for centuries. Later, the corporation was to cut additional variant sorts for some of its fonts at the special request of the Nonesuch Press.

However, it should be noted that very little typesetting or printing was actually done within the Nonesuch premises. There was a small quantity of Janson type (the only supply in Britain at that time), but only sufficient to compose 16 pages at a time. There was an Albion hand press, but the main use of this and the handset type was for the setting and pulling of trial pages at the design stage. Once the layout had been agreed upon, the actual production was contracted to a commercial printer of repute—over 20 of them throughout the years, including the Oxford University Press, the Kynoch Press, William Brendon, the Pelican Press, the Curwen Press (who also color-stenciled some of the illustrations), T. & A. Constable, R. & R. Clark, the Westminster Press, Cambridge University Press, and Joh. Enschedé en Zonen. Only occasionally was a book set in the Nonesuch office—George Herbert's *The Temple* (1927), for example. One was even printed there—Thomas Beedome's *Select Poems Divine and Humane* (1928), but these were the exceptions to the rule.

Meynell's talented direction of the varied resources within the trade enabled him to use whatever type face he wanted, simply by changing the printer. It was a development of the publishing methods of John Lane and Elkin Mathews in the 1890s. From The Bodley Head they had begun to issue books of a superior physical quality and were well on the way to making their competitors aware of the profitability of inspired design, good illustrators, good materials, and high production standards allied to the economies of mechanization when their firm was ruined by the Oscar Wilde scandal: he was one of their authors.

At first, Nonesuch had a tendency to reprint the classics. There were selections or complete standard editions of John Donne, William Congreve, Apuleius, Anacreon, Plato, Charles Perrault, John Milton, Shakespeare, Voltaire, and the Bible. Additionally, authors such as Thomas Beedome and William Harvey were rescued from oblivion. Much care was taken in the selection of competent editors. Further to the credit of the Press, 36 of the first 100 titles were new works, while six more were new translations into English, specially commissioned. Other special translations followed during the Second World War.

Not all the works were of a serious nature. Some were delicious amusements like *A Stitch in Time* (1927) and *Love's Progress* (1929) by James Laver, pastiches of 18th-century poetry in the style of Pope. There were some unlimited editions—compendiums of works by William Blake, Jonathan Swift, William Hazlitt, S. T. Coleridge, etc.; and the bestseller of them all, the famous *Week-end Book,* which was frequently reprinted and revised to the extent of half a million copies from 1924 on. The Nonesuch Cygnets of the 1960s, fine trade editions of children's books, were foreshadowed by the *Tootleoo* editions (also unlimited) of 1925–1927.

Each book was designed in a style to harmonize with the text matter—hence the need for the wide range of types used. Paper was bought from the best mills in England, France, Holland, and Italy. Some of it was handmade, but moldmades and even machinemade papers were used to keep down costs on the longer works or to enable some of the slighter pieces to be retailed for a few shillings. Some papers were made to Meynell's own specification—not always successfully: twice the results were disastrous and had to be scrapped.

In such a seeking after perfection, Meynell was clearly in sympathy with the private presses, and in his autobiography he relates how George Moore went on to produce two further versions of *Ulick & Soracha* (1926) as he checked through the proofs. Thus the cost of the corrections exceeded that of the original setting. And 20 variant settings of the title page for Montaigne's *Essays* (1931) were made and discarded. The 11th book was disliked so much by Meynell when it was finished that he appealed to subscribers to cancel their orders. It was one of his cheapest publications (the price was 5/-), but nevertheless about half of the subscribers met his wishes and he destroyed some 300 copies.

Some of the artists commissioned by the Nonesuch Press were new to book illustration. There were copperplate engravings by C. Sigrist and Stephen Gooden, who also engraved several of the Press's devices; woodcuts and woodengravings by Paul Nash and Blair Hughes-Stanton; color-stenciled drawings by E. McKnight Kauffer, the American whose work was greatly admired in Britain, though largely ignored in his own country; line drawings by Thomas Lowinsky, Georg Grosz, and Albert Rutherston; lithographs by Marion V. Dorn, who was better known as a textile designer.

The venture was a success after three titles had been published. By private press standards the editions were quite large: up to 1,600 copies for some, but sales were no problem. Entire editions were fully subscribed before publication and supplies to booksellers had to be rationed. Nothing like this, at such low prices, had been seen before. Shakespeare's *Works*, issued in seven volumes over the years 1929 to 1933, was regarded as the finest edition of its time, visually and textually, yet at £3-12s-6d per volume it was amazingly cheap. Several titles were offered at prices ranging from 5/- to 7/6d; one sold for 3/9d.

Meynell has admitted that they were lucky in the timing of their début: Nonesuch was first to cater for a large and growing public interest in fine books at prices considerably less than those fixed by the great private presses for their very small editions (rarely more than 400 copies). And the Nonesuch list of about 150 titles was numerically more extensive than any of the others.

With the exception of the Gregynog Press (q.v.) and, to a lesser extent, the Golden Cockerel Press (q.v.), the design of the earlier private press books followed clearly defined house styles, so the great variety in the appearance of the Nonesuch books was in itself a novelty as well as a typographical tour de force. The American typographer, Bruce Rogers, had exhibited a similar inventive approach to book design in the first decade of the century, but the lesson which the trade had to learn was only developed in full by the Nonesuch Press. Fine books could not be produced in quantity and at reasonable prices by the handcraft techniques of the early printers as exemplified by the Morrisonian school of private presses, but the trade printer and binder could overcome the limitations of hand production by the intelligent and artistic control of machine processes without sacrificing quality.

In 1925 the Press had to move into larger premises, and from 1927 its American sales were handled by Random House, New York. Meynell had always supported his publishing program with a lively series of prospectuses and in 1936 the publication of the hundredth book was celebrated with a fine bibliographical appraisal containing many specimen pages, *The Nonesuch Century*, which was accorded the unusual honor of a leading article in *The Times*.

Sadly, however, the Nonesuch Press's heyday had passed. With the economic depression of the early 1930s it had run into grave financial difficulties and was eventually rescued in 1935 by George Macy, founder–owner of the Limited Editions Club of New York, who proposed a take-over. The new program was inaugurated in 1938 with the complete works of Charles Dickens in 24 volumes, plus one of the printing plates for the original illustrations. Although Meynell remained the official typographer, the bulk of the design for this set was the work of Harry Carter. The finely illustrated series, *Ten Great French Romances,* translated into English, was set in England but printed in France and then in the United States because of the paper shortage in Britain during the Second World War.

After the war Macy returned the Nonesuch imprint to Meynell's ownership and a new company was formed, financed by Max Reinhardt. From 1953 the program included the works of Blake and Shakespeare (again) and another Bible. The last two were printed on exceptionally thin paper to reduce the bulk of these long texts far more efficiently than had been possible for the earlier editions. In 1954, when the Limited Editions Club awarded Meynell their Aldus statuette, Bruce Rogers wrote the citation and described the recipient as "the father of fine book making in England." Yet the postwar productions did not meet with the same enthusiasm as that evinced in the 1920s and 1930s, perhaps because the Press had nothing new to say. What was novel about its approach to design some 30 years before was now far from untypical—except for the quality of paper and binding materials—of the contemporary trade book.

One hundred and forty-nine books have carried the Nonesuch Press imprint; included in the total being eight titles in the *Great French Romances* series devised wholly by George Macy and 11 Nonesuch Cygnets for young people. The last of what might be termed the main series appeared in 1965, and the last of the Cygnets was published in the summer of 1968. Sir Francis Meynell died in 1975.

Typography

The literary skill of Meynell and his editors would have ensured successful publishing even if there had not been a matching flair for book design, and that cannot be said of any of the other private presses. Nevertheless, a fine sense of typography and excellent book production made the books themselves a joy to handle. The attractive design and the high quality of the materials only accentuated the sense of communication between author and reader. Meynell eschewed the artificial restraints that a special house style would have imposed upon the appearance of his books. Inevitably, some of the typography was less successful than the rest (the elaborate decorations and heavy Lyonese borders in *The Book of Ruth,* 1923, for example), but this was only spotlighted by the high standard reached with the others.

The large number of different type faces used is understandable in the light of Meynell's desire to regard each text as a separate problem in book design, but certain faces were called for more frequently than others. Monotype Caslon, Plantin, Baskerville, and Garamond—with Scotch Roman, Times New Roman, and the handset Fell types coming equal fifth—together account for 89 publications.

A classical sense of balance is evident in all the Nonesuch books. There are some excellent layouts in the styles of the past. Donne's *Paradoxes* (1923), in its 17th-century spelling and set in the Fell types with decorative initials and head-pieces, is really a type facsimile of the mannered 17th-century book. The majestic pages of the same author's *Ten Sermons* (1923), set in Garamond and printed in red and black on a Dutch moldmade paper, resemble the products of the great 16th-century French printers. Fell italics are used as a text type in the first production, Donne's *Love Poems,* but Blado italic with Poliphilus capitals is more successful and easier on the eye in Milton's *English Poems* (1926) and Dante's *Divina Commedia* (1928)—the latter very handsome, but spoiled by obtrusive compartments around the headings—or Tennyson's *In Memoriam* (1933). (See Figure 1.) A large size of Monotype Bodoni italic is set on the page with great elegance in the two 18th-century pastiches by James Laver, *A Stitch in Time* and *Love's Progress.*

A more personal and inventive style becomes apparent in the title page to Andrew Marvel's *Poems* (1923): the central placement of fleurons in an oval to

In Memoriam

by Alfred Lord Tennyson

1811

A · H · H

1833

1933

London: The Nonesuch Press

FIGURE 1. *Title page of the Nonesuch Press edition of Tennyson's* In Memoriam *(1933), printed in two colors. The original text height is 174 mm.*

contain the author's initials in red is pure Meynell, likewise the lozenge of astronomical signs in red and black on the title page of de Fontenelle's *A Plurality of Worlds* (1929). The title page for Cervantes' *Don Quixote* (1930), also in two colors, demonstrates how the problem of displaying so much information within a relatively small type area may be turned into a triumph. (See Figure 2.)

In Herman Melville's *Benito Cereno* (1926) a large size of Walbaum was handset, well leaded, and printed on grey rag paper. The McKnight Kauffer illustrations, stenciled in color by the Curwen Press, are memorable, and in every way this is one of the outstanding books from the Press. So is the *Nonesuch Bible* of 1925–1927 with its architectural title pages and head-pieces engraved by Gooden. Those copies on Japanese vellum have a warm hue imparted to both text (in Plantin) and engravings by the paper, which is very pleasing. The page size is a happy

DON
QUIXOTE
de la Mancha

THE HISTORY OF THE RENOWNED
DON QUIXOTE DE LA MANCHA
WRITTEN BY MIGUEL DE CERVANTES
SAAVEDRA : MOTTEUX' TRANSLATION
REVISED ANEW (1743) & CORRECTED
RECTIFIED AND FILLED UP IN NUM-
BERLESS PLACES BY J. OZELL WHO
LIKEWISE ADDED THE EXPLANATORY
NOTES FROM THE BEST EDITIONS
IN ENGLISH & SPANISH · REPRINTED
WITH TWENTY-ONE ILLUSTRATIONS
BY E. MCKNIGHT KAUFFER

LONDON : THE NONESUCH PRESS

FIGURE 2. *Title page of the Nonesuch Press edition of* Don Quixote *(1930), printed in two colors. The original text height is 230 mm.*

compromise between the manageable and the majestic. The *Bible* of 1963 is more ordinary and sold very slowly. In a class of its own is the setting of Koch's Neuland type for *Genesis* (1924). The massing of its thick, elemental strokes as a foil for the heavy woodcuts by Paul Nash is reminiscent of the block book.

For the superb editions of Homer's *Iliad* and *Odyssey* (1931), the Greek was set in Antigone and the English translation by Pope in Cochin. It was desired that the two versions should run parallel, page by page, and to make such composition possible the Cochin type was cast on three different body sizes so that a variation of as little as one quarter of a point could be made in the leading where necessary. Also, a heavier weight of Van Krimpen's Open Roman capitals was specially commissioned. The decorations and typographical figurines by Rudolf Koch and Fritz Kredel are referred to below. In John Collier's *The Devil and All* (1934), the frontispiece by Blair Hughes-Stanton in combination with Meynell's startling title page contrasts strangely with the Gregynog Press books illustrated by the same artist.

However, the most noticeable recurring feature of Meynell's individuality is his use of the fleuron. Of course he has only revived an aspect of the printer's art which flourished in 16th-century France, and he and Stanley Morison had written at length on the subject in *Printers' Flowers and Arabesques* in the first issue of *The Fleuron,* in 1923. There was a foretaste of this predilection in the Pelican Press type specimen book of the same year, but in the Nonesuch books we see masterly arrangements of fleurons to produce, sometimes with rules, the most attractive and ingenious page borders (particularly on title pages), head- and tail-pieces, and decorative divisions between displayed lines. (In passing, it should be noted that D. B. Updike was doing much the same thing in the United States at this time.) The fleurons were mostly copies of those used by early printers such as Jean de Tournes, but for the two volumes of Homer mentioned above Meynell commissioned two German artists to design Greek ornamental motifs and figurines which were cast separately in type metal and used in various combinations, exactly as were the conventional fleurons.

The design of other books was affected by the artistic style of the 1920s, and James Thomson's *The Seasons* (1927), de Lamartine's *Graziella* (1929), and *The Week-End Book* (1st ed., 1924) are typical examples.

Bindings

The choice of covering materials was as varied as the typography. George Herbert's *The Temple* (1927) was covered in a handwoven fabric whose pattern incorporated a version of the Nonesuch device; but, most commonly, attractively patterned papers were used, either on their own or with quarter cloth or vellum. Gradually, full cloths and buckrams were added to the range and a few works, for example, the Bible, Blake, Harvey, Homer, and Shakespeare, were bound in full morocco. Dante's *Divina Commedia* appeared in full vellum, but none of these bindings is outstanding in any way. The patterned papers always look interesting yet, because their wearing qualities are inevitably poor, such coverings—even as attractive as these—do not encourage owners to use the books. Thus one of the intentions of the Press must have been thwarted to some extent.

SELECTED BIBLIOGRAPHY

A complete bibliography of the publications of the Nonesuch Press can be obtained from Symons, A. J. A. et al., *The Nonesuch Century* . . . ; in combination with the article on the later years, "Nonesuch: The Next Two Score."

Cave, Roderick, *The Private Press*, Faber, London [1971].

Day, Kenneth, ed., *Book Typography, 1815–1965, in Europe and the United States of America*, Ernest Benn, London, 1966.

Franklin, Colin, *The Private Presses*, Studio Vista, London [1969].

Garnett, David, "The Nonesuch Century," in *Penrose Annual*, **39**, 45–49 (1937).

Jackson, Holbrook, *The Printing of Books*, 2nd ed., Cassell, London, 1947.

Jacobi, Charles T., "The Nonesuch Press," in *Penrose's Annual*, **31**, 17–20 (1929).

Johnson, Fridolf, "Sir Francis Meynell and the Nonesuch Press," in *American Artist*, 38–43; 61–62 (February 1964).

Laver, James, "The Line-engravings of Stephen Gooden," in *The Colophon*, 2 (1930).

Lewis, John, *The Twentieth Century Book*, Studio Vista, London; Reinhold, New York [1967].

McLean, Ruari, *Modern Book Design from William Morris to the Present Day*, Faber, London, 1958.

Meynell, Sir Francis, *My Lives*, The Bodley Head, London [1971].

Meynell, Sir Francis, "A Printer Considers the Book, with a Note on the Nonesuch Press," in *Monotype Recorder*, **32**(3), (1933).

Meynell, Sir Francis, "Some Collectors Read," in *The Colophon*, 4 (1932); and in Bennett, Paul A., ed., *Books and Printing: A Treasury for Typophiles*, rev. ed., World Publishing Company, Cleveland, 1963. A revised version appears in *The Nonesuch Century* as "The Personal Element."

Newdigate, Bernard H., *The Art of the Book*, The Studio, London; Studio Publications, New York [1938].

"Nonesuch: The Next Two Score," in *The Book Collector*, 1–18 (Winter 1971). Contains "Books of the Nonesuch Press published since *The Nonesuch Century*."

Pierpont Morgan Library, New York, *Art of the Printed Book, 1455–1955: Masterpieces of Typography through Five Centuries. With an Essay by Joseph Blumenthal*, David R. Godine, Boston, Mass., 1973; The Bodley Head, London, 1974.

Ransom, Will, *Private Presses and Their Books*, Bowker, New York, 1929. Reprinted: Duschnes, New York, 1963.

Ransom, Will, *Selective Check Lists of Press Books*, Duschnes, New York, 1945–1950. Reprinted 1963.

Simon, Herbert, *Song and Words: a History of the Curwen Press,* Allen & Unwin, London [1973].

Simon, Oliver, *Printer and Playground: an Autobiography,* Faber, London [1956].

Symons, A. J. A. et al., *The Nonesuch Century: An Appraisal, a Personal Note and a Bibliography of the First Hundred Books Issued by the Press, 1923–1934,* The Nonesuch Press, London, 1936.

Tomkinson, G. S., *A Select Bibliography of the Principal Modern Presses,* First Edition Club, London, 1928.

JAMES A. DEARDEN

NONPRINT MATERIAL

SOUND RECORDINGS, MOTION PICTURES, AND PICTURES*

Although the word for library is derived from the Latin word for book, there is no argument now that libraries should include as resources whatever is considered a source of information. This would include not only books, periodicals, pamphlets, and government documents in all their wide variety; but also maps and charts, sound recordings, and motion pictures; and the various kinds of pictographic material other than motion pictures, such as film slides; and an almost endless variety of material from games and realia to pets. Libraries can be found that include examples of each of these kinds of materials. Unfortunately no good name for all this material exists, and supposing that a name, such as the one above, is chosen, then no suitable definition can be found. What is meant by nonprint material is sometimes called nonbook material, but this runs into conflict with the idea of the generic book, simply another way of saying information source. Even if a definition is found, there are problems in describing each of the materials, so much so that maps, charts, and atlases have been treated in a separate article attached to this discussion. This section covers the three typical kinds of nonprint material: sound recordings, motion pictures, pictures; and briefly considers all the rest including games, realia, and multimedia kits. Problems exist with this material that, for one reason or another, make it very different from books, although the value as an information source is unquestioned.

Nonprint material does not refer to microforms, another reason for preferring nonprint to nonbook, since microforms are books in unbooklike shapes. The information is conveyed primarily through use of language in printed form, and there are relatively few differences in the organization of such material. In any case, the subject deserves its own treatment, separate from anything that might be said about nonprint material, where the information is generally not conveyed through

* The Bibliography for this section begins on page 114.

use of printed words although they may be employed in an ancillary fashion. The ideal examples of nonprint material are sound recordings.

Audio-, Phono-, or Sound Recordings

The inventor of sound recordings, Thomas Alva Edison, is credited with having set up the first research laboratory at Menlo Park, New Jersey, where he employed some 20 skilled clock makers and machinists. His phonograph, as it came to be called, brought him international fame, although he had not set out to create it. The phonograph is generally considered the result of serendipity, or more accurately, of Edison's genius for constructive thinking and for utilizing ideas as they came into his mind. He had worked on the telephone, invented the year previously, greatly improving the quality of sound that was transmitted. In trying to find a means of repeating telegraph messages mechanically, he and his associates came upon the basic principles that have governed the recording and reproduction of sound ever since 1877. These were confirmed when Edison heard the machine repeat the words he had spoken into it, "Mary had a little lamb."

The first phonographs used cylinders made of a kind of tar found on the Island of Trinidad, and a considerable number of these, including the machine that would play them, still exist. Edison, quite significantly, made recordings of the great men of his time including Tennyson and Browning. Johannes Brahms played one of his Hungarian rhapsodies on the piano for Edison. The first of Edison's commercial recordings, however, were made for coin-operated phonographs and featured whistlers, bands, and popular songs. The equipment was rather costly and the cylinders subject to breakage, but even so the Pathé brothers began to produce cylinders in a suburb of Paris.

A major development was the patenting in 1887 of a disc by a German immigrant living in Washington, D.C., Emile Berliner. He began manufacturing "Gramophon" equipment and discs in 1894, and ultimately this was the preferred method of recording. The German company affiliated with Gramophon and the French companies very early began to record opera, influencing American companies to compete, so that by 1910 almost all the recordings made were of serious music. The great tenor, Enrico Caruso, in particular helped to popularize sound recordings with his numerous arias and songs demonstrating what gave him such a reputation as the greatest tenor of his time.

Acoustical methods required that bassoons replace the cellos, and tubas replace the double bass in an orchestra because the phonograph was unable to reproduce the lower string sounds of the orchestra. The first sound recordings distorted all sounds because the process of mechanically producing and reproducing grooves in solidified tar eliminates all but the middle range of sound that can be heard by human beings. The development of electrical recording of sound, around 1925, improved the quality of the recording, and the further development of electrical equipment to record and reproduce sounds put the quality of the phonograph about on a level of the radio. Until frequency modulation was introduced, the limit of sound that could be recorded or reproduced remained within the middle range of the 50 to 16,000 cycles per second that human beings can hear. The phonorecording industry began a significant revival of sales and of recordings after the years of the Great Depression, but the greatest development awaited the invention of methods of producing tracking on phonorecordings that eliminated much of the wasted space. Long-playing records, as they were called, were invented by the Columbia organization and almost instantly countered by the phonorecordings invented by RCA. The speeds and sizes of the discs varied.

The discs used up to the invention of the long-playing records, in 1948, revolved 78 times a minute and could produce about 5 minutes of continuous music. This was ideal for the sound recordings used in mechanical phonographs, juke boxes, which were found everywhere in the 1930s and 1940s. The 45 revolutions per minute and small size, about 7 inches, of the RCA product met the requirements of juke boxes. Columbia produced 12-inch discs which could play about 25 minutes of continuous music, thus making the recording of long works and operas a practical reality. Serious artists came to have fans as much as the popular singers of the time, but so far as the recording industry was concerned, Elvis Presley and the Beatles were of far greater value than any number of Joan Sutherlands and Mario Lanzas. While the long-playing discs used vinyl instead of shellac or other substances, they were not unbreakable, and the collectors of serious music seemed to be satisfied with one recording of a composition which never really lost its interest. Popular singers and groups were acclaimed and their songs played endlessly for a relatively brief period of time and then forgotten. The obsolescence factor was in the music itself, rather than in the method of recording. As each of the mechanical improvements was made, the public seemed to evaluate its significance and decide whether the old equipment and collection would be discarded in favor of the new or whether there would be a gradual changeover. This has been seen in the development of stereophonic and quadraphonic reproduction of sound, the former having had a much greater effect than the latter, and in the development of home recording equipment. The most expensive equipment can now reproduce sounds beyond the range of human aural perception.

No serious attempt was made to produce and market home recording equipment until the reel-to-reel tape recorder was developed and mass produced. Home recording was simplified by the development of cartridges, which use continuous loop tapes, and cassettes, which are like the reel-to-reel tapes in principle although very much smaller and easier to operate, so much so that the piracy of musical performances became a major concern of orchestras and opera companies. The production of prerecorded reel-to-reel tapes has practically ceased because of the expense of production and hence of ownership. It is relatively easy and inexpensive for an individual, or a library, to make cassette or cartridge recordings using the broadcast signal of FM stereo radio stations. The result is at about the same level of quality as the original cartridge or one made at the radio station of a live performance.

All of this history has in large measure influenced the way libraries have treated sound recordings as an information source. Special music libraries very early began to collect phonodiscs and even public libraries began to regard such collections as valuable to the public. By the end of the Second World War, there was no longer any doubt about the usefulness of a "record collection" in a public library, although almost all of the collection consisted of serious music and such recordings of plays, poetry, and foreign-language lessons as were available.

University libraries tended to keep the music collection with a special music library, although a few began to make special collections of sound recordings of speech. The general change in the teaching of foreign languages put sound recordings into the classroom, and the ease of recording speeches and discussions has put the library in the position of manufacturing its own sound recordings. Cassettes in particular are in wide use as adjuncts to teaching since both the sound recording and the equipment needed to produce it are inexpensive and highly portable. Although there are many points of similarity with the acquisition and organization of book collections, there are many differences and several unresolved problems.

At the present time, the commercial sound recording industry is very much like the publishers of books, and the product has some of the features of books that make the acquisition of sound recordings at times as frustrating as the purchase of print material. Sound recordings go out of print and are unavailable for a time. They may be rerecorded and offered anew as if the first recording of a given work. The more popular classics exist in dozens of recordings, and the less well-known works may not be recorded, or may be included with a popular work, or may be produced in a very limited number of copies which are soon sold.

The chief tools of the acquisition librarian in the purchase of commercial sound recordings are the *Schwann* catalog and the *Harrison* catalog of tapes. *Schwann*, in particular, is a systematic listing of all the sound recordings available on discs and many of the tapes as well. It lists serious music by composer and includes sections on performers and on types of music, operas, musical comedies, and spoken recordings. It is published monthly and is available through a dealer in commercial sound recordings. Because it includes dates and such details as opus number and, where necessary, date of composition, *Schwann* becomes a cataloging tool as well.

A more difficult task is in the evaluation of locally produced sound recordings, which may have historical interest, and in cataloging all sound recordings, in view of the major differences that exist in the basic theory. The *Anglo-American Cataloging Rules* of 1967 included in Section Three directions for the cataloging of sound recordings, generally following the methods employed in music libraries earlier. From the outset the recorded score was treated as the source of the music and the phonorecorded version as a kind of variant, with the indication of the performer retained where descriptive notes would have been made for the score, that is, before contents notes. Entry for a single work by a serious composer, generally the case with the first recordings made, was under the composer, and the possibility of the label of the phonorecording having been printed in France or Germany was encompassed by the rules for the choice of uniform title. These rules, obviously, neglect the varieties of music and speech that are recorded and the way such sound recordings are sought and used by the clients of a library. In a collection of locally produced sound recordings of various students playing the same work, what is important is not so much the work as the performer. This is also true of commercially produced sound recordings, which are as often selected for the performer as for the composition, and in the case of several recordings of the same composition, where the choice of performer is the only basis for any selection at all.

Nevertheless, as the second edition of the *Rules* is prepared, there seems to be a general belief that performer will be retained as a note, although the similarity of performer to edition is rather obvious. If a standard general bibliographic description is accepted for the cataloging of all the information sources in a library, then including the performer in the edition area seems to be the only approach that is defensible. In a computerized system, the edition area is searchable and, with the development of punctuation that indicates the searchability in the edition area, there seems to be no way of defending the tradition that makes the performer worthy only of a note and possibly an added entry.

A further difficulty is found in the number of compositions included in a single phonodisc. Entry under title is the only possibility, provided the work has a title that is different from the performer. There seems to be some argument for entering jazz sessions under the group because each performance is in its truest sense a re-creation of the original work in a way not to be repeated. However, the whole question of main entry becomes moot when the computer is used for the storage of catalog entries since the searchability of the entry by title is of much more importance. For single compositions on one side of a phonodisc, there is no question that the entry under composer is useful, but it ends there.

The distinction between the composer's name as found on the label of a phonodisc and as established in an authority file is quite obvious. Fortunately, there are fewer composers than authors of books, and they tend to be much better known. However, at some point in the future, the difference between access to the material on the basis of a standardized form of the author's name and on the basis of the name on the label of a phonorecording may depend on whether a method of cataloging has been found that will provide for both without an expensive process of verification.

Such problems of cataloging, however, are a minor consideration in view of the lack of standardization generally. Very few public libraries accept the rules which, in large part, are determined by the Library of Congress. Where the date of the recording is required, most libraries lacking access to copyright records must either substitute guesswork or remove the requirement altogether. Libraries do not collect phonorecordings in the way they collect books. All but the largest special music libraries are satisfied with a representative collection that can readily be listed in brief form in a kind of book catalog format, although pamphlet catalog would be a better description. Where there is one phonorecording of any given composition, there is no means of selection on the basis of performer and all the details of identification are unnecessary. Brief form cataloging is commonplace and entirely satisfactory.

Further problems are found in the circulation of phonorecordings because the best are the most fragile and very easily damaged on one playing. The library can scarcely inspect the equipment used by the patrons of a public library, although it seems they use a bent pin for a needle in place of the diamond stylus recommended by the manufacturer. Some libraries routinely copy the phonorecording onto a cassette and lend that. This is, technically, a violation of the copyright, just as the recording of works of music broadcast live is prohibited, except when made for home use. Libraries of phonodiscs can be open to the public so that selection on the basis of information printed on the jacket is possible. In some instances, the information on the jacket is a good source of information about the composition and the performer.

The library probably has no information source that can so readily be spirited away by a predatory user as the cassette sound recording. It is so small and convenient that it can be slipped into a shirt pocket and be hidden by a packet of cigarettes. Cassettes must be kept away from the public and borrowed like other restricted material. However, the library can duplicate them readily and can provide for the class of users who are most dependent upon recorded sound, the blind.

Considering the efforts made by the federal government to provide service to blind patrons of libraries, even relatively small public libraries can make some effort to serve as a place where the blind patrons can take advantage of the Library of Congress and its several services. The use of the cassette recorder has greatly simplified these services and brought them within range of almost every library. Books, lectures, discussions, even students' notes are readily obtained and loaned.

Phonorecordings, despite the lack of a standardized vocabulary to name them, should constitute an important part of any collection, even that of rare materials. The piano rolls sold at the turn of the century for use with mechanical pianos, "player pianos," are now highly valued and account for the rediscovery of an American composer, Scott Joplin, whose "rags" have become an important feature of serious music collections. Some special processes have enabled commercial phonorecording companies to offer Paderewski as a performer by using the paper rolls he made and one of the best player pianos. Similarly, phonorecordings of important personages of the past may exist in a few copies of phonorecordings now forgotten, for instance that of Edwin Markham reading his poems, in the collection of Wagner College Library. Rare recordings are not unusual and deserve as much care and protection as rare books. Their value can only increase as time passes.

Motion Pictures

Included here are all the different ways that visual reproduction of motion has been recorded, not only film but also video tape and kinescope, film reproduction of television pictures. Like sound recordings, motion pictures are the result of the inventiveness of Thomas Alva Edison and the propensity of American manufacturers to produce what appeals to the public.

The claim that Edison invented the motion picture is not so easily verified as is the case with the phonograph. The process of using celluloid film, after earlier procedures using glass plates had proved too slow and costly, was developed in Edison's laboratory by William Dickson, and the first kinetoscope was probably Dickson's invention as well. Edison believed that the pictures should be seen by one viewer at a time looking into a machine that operated when he inserted a coin. Other inventors in England and France developed the projected motion picture, based on Edison's patented camera and projector. In particular, the Lumière brothers reduced the speed of the film (from 48 frames a second to 16) and caused the film to stop momentarily before the projected light, producing a much smoother flow of action. Dickson's photograph of *Fred Ott's Sneeze* was staged for the camera, but the Lumière brothers liked to photograph what existed around them. Even as early as 1895 a kind of separation of material between the fictional and the actual occurred, leading ultimately to the photoplay as opposed to the documentary.

The early films used were subject to deterioration and were so highly inflammable that cities passed special fire regulations to protect patrons. The nickelodeon, a kind of small theater where films were shown for those who had paid the nickel admission charge, first opened in Pittsburgh in 1905. From this beginning, theaters were later enlarged into the ornate movie palaces of the 1920s. Films also changed from the dangerous and unstable kind used for the first motion pictures to those that are quite safe, although subject to damage. In order to copyright a motion picture, the owner had to submit the film with each frame fully developed into a print on paper. This requirement of the copyright office, at a period when the infant industry was suing its way to standardization, preserved the first efforts long after the original film had become useless with decay. Edison among others sued for infringement of copyright and violation of patent privileges and was counter-sued in return. Nevertheless, the equipment was developed to a high standard and the films produced could be shown on a wide variety of projectors. The looped film gave way to the photoplay in *The Great Train Robbery* and the French film, *Trip to the Moon*, directed by Georges Méliès.

The jerky movements of the actors as seen on the screen and the desire of the patrons for something funny made the first products of the growing industry almost entirely comedies. Charles Chaplin became one of the first stars of international repute. The use of the motion picture to record actual events of the time kept pace with the development of photoplays as a separate art form. By the 1920s the silent motion picture had reached a stage of development beyond which only further inventions could take it. This came with the introduction of sound in 1927. A complete revolution occurred in the movie industry and by 1930 sound motion pictures were established as a form of entertainment that was inexpensive and enjoyable.

Motion pictures were as much used in science as in the arts. Films were used in educational programs in schools as early as the 1920s and were fairly commonplace by the 1930s. Specialists in the use of motion pictures as instructional devices through a process of doctoral dissertations and textbooks made the use of motion pictures, slides, and other darkened-room teaching aids commonplace by the end of the 1940s. Libraries by this time had begun to include a film service as part of their program of activities. The Ferguson Public Library of Stamford, Connecticut, was a kind of model for the way such service could be handled, with full-time professional and additional help. Very few libraries could afford to collect film because of the cost, but many organizations had films to be used as advertisement, or at least as a public relations device. The service consisted of bringing the two groups together: local organizations that needed film for a program and corporations that wished to make their products known through an explanation of the industry. It was soon realized that someone would have to review the film, because the amount of advertising at times outweighed the factual matter or entertainment promised. Films could also be rented on a monthly basis at relatively low cost per showing.

Home movie equipment was produced before the Second World War, but the cost did not reach the level of the average person's budget until the 1940s and 1950s. The 8-millimeter film, where 16 millimeters had been standard before, became so commonplace that a great number of people were amateur movie producers. The great impetus for the amateur was the development of the television industry, which had been delayed by the Second World War and was in a position to advance rapidly during the reconstruction period. To record programs, a motion picture camera was used to photograph the signal received, producing a poor quality black-and-white reproduction of the program. The first use of film, directly, for the production of a program was by the Desilu Studios for the *I Love Lucy* series in the early 1950s. Most of the programs were produced and broadcast live. Almost as soon as the television industry became a nationwide phenomenon in the United States, the large number of motion pictures made in the 1930s and 1940s became the bulk of the program offerings.

The development of color television and of the video tape recording devices occurred almost simultaneously. Several efforts were made to develop a video tape industry that would replace the production of motion picture films for school and home use, but these proved to be unsuccessful. At the present time, video tape is extensively used for the recording of local productions because it requires much less ancillary equipment in the form of lighting and sound proofing.

Historical collections of motion pictures have been developed in several places, most notably at the Museum of Modern Art in New York City. Interest in the motion picture as an art form has continued to grow, so that even those universities and colleges with collections formerly devoted to the purely factual film have been able to purchase some of the classics of the past. In some cases the copyright and its renewal have expired. The bulk of the collection, though, is made up of films that are useful in classes. Television has been added to classrooms in many places since the first educational television station, WQED, began operation in Pittsburgh in 1954.

Films are reviewed and lists of the best films for certain purposes are created all the time in a variety of periodicals devoted to educational films, films as an art form, the history of films, and the use of films in scientific settings. Along with those for phonorecordings, the Library of Congress regularly issues catalog cards for motion pictures and for filmstrips. In a strict sense, Dickson's first motion picture was a filmstrip, but since that time the filmstrip as a separate teaching device has been developed to the point where there is little connection between motion picture producers and the creators of filmstrips.

Motion pictures are like books in another respect. Since both are ideal ways of conveying a narrative, the contents of motion pictures can be as elaborate as a book. In fact, some of the most impressive motion pictures have been taken from books, fiction and nonfiction, and there is a continuing interplay between the two media of communication. Books are written from photoplays and photoplays are prepared from books. Children's books have been made into motion pictures, using animation, so that the content of the book is in effect the content of the motion picture.

Motion pictures are still very expensive to own. Only a large library with a sizable budget for the purpose is able to purchase a significant collection. Since most school libraries need motion pictures as a part of the educational program, district centers of films have been created that are, in effect, a kind of central library with each school as a branch. Some expected administrative difficulties aside, these central libraries of films have greatly increased both the use of motion pictures and their appreciation. Usually the holdings are listed in a book catalog, often of sizable dimensions.

The cataloging entry of motion pictures is purely title since the rather judgmental concept of authorship cannot be sustained by centering on any of the great number of people required to produce a lengthy motion picture. Directors have come to be regarded as essentially the artist of the film, the performers representing a different kind of art not central to the character of the film itself and, in any case, using those techniques that the director wants. Even so, the director is not always named and in the case of factual films may be of less importance than the cameraman or the producer or the author of the script. Entry by title has served remarkably well as a means of identification to which access can be gained by subject matter, and if needed in a particular library, performers and directors are given entries.

The cataloging of motion pictures, however, is probably more expensive and demanding than for any other form of information source, because the user is badly served if a complete and accurate annotation is not supplied along with the identifying features of the film. To write an annotation requires viewing the motion picture, usually twice, and preparing the annotation so that the subject matter is apparent to the user, who will decide to select one film or another. An annotation that is overlong will not be read and one that is too brief cannot convey the content of the film. Hence the author of the annotation must develop considerable skill in the use of language so that the annotation will not merely be understood but rather cannot be misunderstood by any reasonable person. This requires as much talent as skill, and not every cataloger is capable of annotating films expertly. For this reason, even though the film library uses a book catalog for this listing of its holdings, the Library of Congress catalog card may be purchased or the National Union Catalog consulted as a means of obtaining the annotation necessary. Unfortunately, these annotations are not of uniform quality and in any case cannot obviate the requirement that the cataloger view the film once or more in order to evaluate the annotation as well as the film.

Subject headings can be derived from the annotation, if it accurately represents the contents of the film, and the book catalog can provide access by subject that is usually welcomed by the user. A further problem is inherent in the use of book catalogs. Supplements must be issued as the collection grows, and if a significant number of the films are not owned, but rented, a question exists whether the film and the annotation should be permanently listed in a book catalog. A further unresolved problem that includes the cataloging of all media is the question whether the cards for nonprint material should be filed in a catalog along with those for book material. The belief among professional educators is that such interfiling is essential in school libraries, with the tendency to think that this extends as well to all other libraries.

Certain facts must be determined before a public, college, or university library decides to interfile catalog cards for all its information sources, of which the most difficult to obtain are the expressions of the users' preferences. Simply asking the clientele of the library will be of little help since users customarily answer what they believe the inquirer would like to hear. Users are not easily approached about their use of a multimedia library. However, it must be apparent that a user generally knows in advance of consulting the catalog what he wishes to find, whether a book or a motion picture or a phonorecording. He may never have considered that anything but a book is available. Libraries that have motion pictures for individual use, employing any of the several devices that make this possible, may spend a great deal of time reflecting on the preferences of the users and neglect preparing a kind of user's manual on the library that would inform them of what is available and how it may be found. In view of the problems libraries are having with overlarge card catalogs and the plans to change to computerized methods, the question seems to be incapable of an answer before the problem ceases to exist. Underlying the insistence of the interfiling of cards in a public catalog seems to be a belief that this method alone adequately informs the user of the existence of material. Signs and brochures seem a much more reliable method when the card catalog has grown to mammoth proportions.

A library with a stable historical collection of material may find that producing a booklet describing the collection will be as valuable as filing cards in the public catalog. A growing collection can cause as much trouble in the filing of cards as any other kind of material, and the cards needed for certain kinds of material can swamp the catalog. This is not to say that it is always unwise to interfile the cards in the public catalog.

A college library with an active nonprint collection for individual use and a relatively small collection of books would find that interfiling catalog cards does increase the usage of the material, but that signs and brochures are still needed along with an explanation of the library's services to incoming freshmen. This is similar to the school library where the librarian is, of necessity, a media specialist who can advise teachers on ways to plan a multimedia approach to the subject to be taught. There is no question now that students benefit from this approach, if only because it holds their attention. It does not, however, replace any of the methods used heretofore, from brief lectures to discussions.

Where the library is not involved in the production of material, it may find itself swamped with more to catalog than can be accomplished in any reasonable period of time. Since the standards for cataloging have not yet reached general acceptance, where they exist, the librarian faced with the need to catalog a large collection of nonprint material may feel himself beset with more problems than anyone can solve. This is particularly true of picture collections, regardless of the form of the picture—whether film slide, glass slide, clippings from periodicals, transparencies, or charts.

The cataloging of nonprint material can be separated into two broad classes of material, those with labels that provide a source of identification of the material and those without such labels. The former, except for phonorecordings, can be cataloged following the specifications of the revised Chapter 12 of the *Anglo-American Rules* of 1967. This provides a kind of uniform approach utilizing International Standard Bibliographic Description. The computerization of such entries will cause no difficulties. Material without labels must be given a mark of identification and provided with a subject approach, the minimum access that the librarian offers.

Most forms of nonprint material will incur no problems, whether games or models, art prints, or copies of statuary. The Erie Public Library's services to children include pets that may be borrowed, with the approval of the parent, for a period of 2 weeks to a month. The youngster is expected to keep the animal in good health. Several college libraries have collected prints of great works of art, suitably framed, which the student can use to decorate his otherwise cheerless dormitory room. Many public libraries will lend games to their patrons, who must bring back all the pieces, and cassettes may be included in a kind of kit which includes printed material and possibly pictures as well. The only question to be resolved with this material is how to make it known to the public to encourage its use. Libraries will customarily lend cassette recorders to their blind patrons at least, and to others depending on the resources available. It is not uncommon for a film library to lend the projector along with the film. The group borrowing the film and the projector is responsible for bringing both back undamaged. (Film libraries usually request that the film not be rewound so that it can be checked and repaired before it is lent again.) Even equipment may be cataloged using the rules provided in the revised Chapter 12, although subject to a little interpretation. The problem with pictures is different.

Pictures, Projectuals, Etc.

If the problem of nonprint material is its abundance and the possibility that a local factory produces more than can be organized for reuse, then nothing is so exemplary of this as pictures. Almost anyone with an inexpensive camera and color film can produce more pictures than can be utilized by the library. In addition, several companies produce a wide variety of film slide collections to be used for the purpose of illustration, with or without accompanying sound recordings and pamphlets in a kit.

An atlas is, after all, only a collection of maps, and a group of film slides on a particular subject can be grouped together and the whole group cataloged. Art prints are best cataloged under the name of the artist since the titles do not always represent a unique method of identification. Even a group of art prints, though, can be organized into periods and localities, providing more than the approach solely by artist. This is especially useful if art prints include photographs of furniture and pottery without any artist being named. A group of film slides taken on a trip to an interesting place and given to the library can be assembled into a container used for the slide projection and the whole container entitled and cataloged. This, at least, will prevent the cards for each of the slides from clogging a catalog.

Whatever the approach, pictures represent a kind of material for which the librarian must supply not only the access but also the identification. The Bettman Archives, probably the largest commercial picture collection, has consistently refused to disclose its method of organization. The Picture Division of the Special Library Association investigates on a continuing basis the methods of organization in various libraries. So far, the development of subject heading lists for pictures has been very much a hit or miss activity without any substantial theory to support what it done or to provide a way of investigating more productive methods.

The research that has finally resolved the general problems of subject heading lists applies equally well to pictures, with one distinction. Books can be given subject headings that indicate a discipline or what is called in general semantics, a higher order abstraction. Pictures, however, must use terms that apply to actual things, people, places, and events. The use of abstract terms will only confuse the patron and will put the cataloger into the unethical position of seeming to pass judgment on the picture. Whimsical subject headings cannot be understood, so that such words as "motherhood," "intelligence," "democracy," "biology," and "patriotism" are meaningless. The subject headings must be aimed at supplying the user with the pictures he is looking for.

Artists, in particular, need pictures of things to look at, and the large collection of pictures in the New York Public Library is widely used by artists employed in midtown Manhattan by advertising and designing firms. The New York Public Library's collection is taken entirely from pictures in periodicals. These are grouped by subject in file folders. The number of pictures is penciled on the folder which is lent to the user. This is essentially the same practice as grouping film slides together in a container used for the projector.

Newspaper morgues are faced with the problem of providing pictures of individuals on demand and must organize their collections in a highly detailed fashion. The name of the individual and his occupation or what he is known for should be included with the picture, usually a glossy photograph that is easily reproduced. Somewhere between these extremes are the collections used in most areas of science and the professions. Medical libraries, in particular, may have a large number of pictures to store and make available to physicians. Larger hospitals may have a regular program of obtaining film slides of various pathologic conditions wherever possible. Architectural libraries, in particular, may make great use of pictures, often including detailed studies of buildings.

The development of the subject access, once the principle of using the most precise and applicable term is accepted, is a continuing operation. Because the see-also structure is ineffective, the subject headings should be classified, or at least categorized, to prevent including synonyms and to show the relationships between the headings. The classification system can be relatively simple so long as it provides for the identification of individual names, the lowest order of abstraction, as well as such group names as are applicable. The special library would avoid headings that, in effect, simply give the subject area of the entire library. A subject heading "architecture" in an architectural library is meaningless, just as the heading "medicine" would be, although the latter is far worse because it is both the name of a discipline and the name of such a wide variety of actual things as to be too vague to convey anything to the user. Since the names of major classes may not be suitable as actual subject headings for the pictures in the collection, it is wise to show them in brackets, or in other ways indicate that the words identify a category of subject headings rather than individual parts of the collection.

Where subject headings are the only means of access, the identification of the picture is provided either by labeling each slide with the number of the container or numbering each slide. If pictures clipped from periodicals are kept in file folders, it is necessary to label each of the pictures with the subject heading or the number of the file folder. This number can be random or sequential, there is little difference in the two, so long as the number is unique.

Entire libraries have been organized on the basis of the nonprint material contained, such as a collection of specimens. Botanical libraries customarily include not only the pictures of plants but often specimen parts as well. Entomological libraries can include mounted specimens kept in special containers as well as the pictures and printed information that refer to them. Zoological libraries, especially those dealing with animal behavior, may include a large number of motion pictures. In each of these libraries, the subject access to the material is crucial not only to the user in search of information but to the librarian seeking to develop the collection. The best guide to future acquisitions is the state of the library, its weaknesses and strengths. A specialist can help to indicate where the collection needs further material, but the librarian is responsible for providing resources that may be required, before any specific requests are received. This can be done only if the collection is completely organized and the librarian has a means of judging by subject what further acquisitions will be needed.

Conclusion

This article has not attempted to do more than summarize the areas where further investigation is needed. The use of nonprint material in libraries will increase in the future, as the expectations of users for this kind of service become commonplace and as well received as other demands. The progress toward standardization of cataloging has been accelerated by the development of International Standard Bibliographic Description, based as it is on sound theoretical grounds. Further progress may be expected as the commercial sources for various kinds of material are better covered by the equivalent of bibliographies. In this way, the acquisition and cataloging of nonprint material can be less of a burden and its use ensured by its accessibility.

Even so, nonprint material will require special attention in the development and use of collections. Where a factory of such material is associated with the library, the process of selecting the most useful of the product will be as important as making it available for use. A consistent problem of the past has been the lack of clear guidelines for the reusability of nonprint material. The assumption made by librarians is that all is worthy of storage, but this runs counter to the preferences of the producers of nonprint material. Possibly they feel that too great a collection will limit the need for their services.

Experiments with the storage of material amid the books in open-stack libraries have shown that nonprint material requires special handling if it is not to be damaged or lost. Unbreakable phonodiscs not only force the shelving into space-wasting patterns but also result in broken phonodiscs, regardless of the claims of the manufacturer. The classification of nonprint material, especially phonodiscs, has resulted in several systems, some in use in particular libraries; but at the present time none seems better than a simple reader's interest classification if shelving by the producer's serial number, as is done in retail outlets, is not followed. In larger collections, this is at once the simplest and easiest to follow. The *Schwann* catalog becomes a guide to the shelving as well as a listing of other material available.

A controversy raged among specialists in nonprint material for a time over just how such material was to be considered in a theoretical sense. The *Anglo-American Cataloging Rules* of 1967 exemplify the Just-like-books Theory, in the reaching for main entry and the reference to the work in printed form. As is true of most controversies, there was some truth on both sides. Nonprint material is just like books so far as usefulness as information source is concerned. But the similarity ends there. Books and all other information sources should be cataloged following a similar pattern of description, amounting to unique identification for very large libraries, which can be reduced, as needed, in libraries where less detail is sufficient. Access to the material should depend on what the user of a given library will look for. It is as true of nonprint material as of books that the library may as well not own the item in question if no one can find it. Subject access in the public catalog, whether in book, card, or computer readout form, is essential since much of the material must be stored away from books in special shelving, in special rooms, or even in vaults. Open-stack storage of motion picture films and cassette tape recordings is practically impossible, if only because of the size of the containers.

Nonprint material is not just like books but different in many respects, if not all. Certainly the production of nonprint material represents one of the most important aspects of the communication revolution and the information avalanche. No library, or librarian, can disregard such material altogether, not even special libraries where print material dominates. Even law libraries are beginning to use phonorecordings extensively. Librarians have shared their responsibility with the media specialist to their disadvantage, because the media specialist is likely to think in terms of production and use, and the librarian in terms of cataloging and storage. All these considerations are necessary for a successful multimedia library, which in the years to come will describe almost all libraries.

SELECTIVE NONPRINT BIBLIOGRAPHY

Bibliographies, Catalogs, Directories, and Yearbooks

Anglo-American Cataloging Rules, Part III, American Library Assoc., Chicago, 1967.

Anglo-American Cataloging Rules, Chapter 12, American Library Assoc., Chicago, 1975.

Audiovisual Market Place: A Multimedia Guide, Bowker, New York, 1969–.

Daily, Jay E., *Organizing Nonprint Material,* Dekker, New York, 1972, pp. 171–190.

Educational Media Council, *Educational Media Index: A Project of the Educational Media Council,* McGraw-Hill, New York, 1964, 14 vols.

Educational Media Yearbook, Bowker, New York, 1973–.

Educator's Purchasing Guide, 7th ed., North American, Philadelphia, 1975–.

Guide to College Film Courses, American Film Inst., Washington, D.C., 1969/70–.

Hicks, Warren B., and Alma Tillin, *Developing Multi-media Libraries,* Bowker, New York, 1970.

Index to Instructional Media Catalogs, Bowker, New York, 1974–.

International Index to Multi-Media Information, Audio-Visual Associates, Pasadena, Calif., quarterly.

Learning Directory, 1970–71, Westinghouse Learning Corp., New York, 1970, 7 vols.

Learning Directory, Supplement 1972–73, Westinghouse Learning Corp., New York, 1973.

Limbacher, James L., *A Reference Guide to Audiovisual Information,* Bowker, New York, 1972.

Modern Living Aids, *Audio-Visual References,* Modern Living Aids, New York, n.d.

National Information Center for Educational Media (NICEM), *Index to Producers and Distributors,* 2nd ed., Univ. Southern California, Los Angeles, 1973.

Perkins, Flossie L., *Book and Non-Book Media: Annotated Guide to Selection Aids for Educational Materials,* Natl. Council Teachers of English, Urbana, Ill., 1972.

Nonprint Review Sources

Educational Film Library Association, *Film Evaluation Guide,* Educational Film Lib. Assoc., New Haven, Conn., 1946–.

Landers Film Reviews, Landers Assoc., Los Angeles, Calif., 1956–.

Multi Media Reviews Index, Pierian Press, Ann Arbor, Mich., 1970–. Name changed to *Media Review Digest* with 1973–74 volume.

The New York Times Film Reviews, New York Times and Arno Press, New York, 1970–. Volumes: 1913–1931, 1932–1938, 1939–1948, 1949–1958, 1959–1968, 1969–1970, 1971–1972.

Multimedia Sources

Brown, Lucy Gregor, *Core Media Collection for Secondary Schools*, Bowker, New York, 1975.

Educators Grade Guide to Free Teaching Aids, 20th ed., by Patricia H. Suttles, Educators Progress Serv., Randolph, Wisc., 1974.

Elementary Teachers Guide to Free Curriculum Materials, 31st ed., by Patricia H. Suttles, Educators Progress Serv., Randolph, Wisc., 1974.

Encyclopedia Britannica Educational Corporation, *Films/Filmstrips and Other Learning Resources—College*, Encyclopedia Britannica Educational Corp., Chicago, 1974.

Freedman, Florence B., *Classroom Teacher's Guide to Audio-Visual Material*, Chilton Books, Educ. Div., Philadelphia, 1967.

General Services Administration, National Audiovisual Center, *A Catalog of United States Government Produced Audiovisual Materials, 1974*, National Audiovisual Center, Washington, D.C., 1974.

McDaniel, Roderick, *Resources for Learning: A Core Media Collection for Elementary Schools*, Bowker, New York, 1971.

National Information Center for Educational Media (NICEM), *NICEM Update of Nonbook Media: 1973/74*, Univ. Southern California, Los Angeles, 1973–.

Pittsburgh. Board of Public Education. Audiovisual Section, *Catalog of Audio-Visual Materials*, Board of Public Education, Pittsburgh, n.d.

Rufsvold, Margaret Irene, *Guides to Educational Media: Films, Filmstrips, Kinescopes, Phonodiscs, Phonotapes, Programmed Instruction Materials, Slides, Transparencies, Videotapes*, 3rd ed., American Library Assoc., Chicago, 1971.

Rufsvold, Margaret Irene, *Guides to Newer Educational Media: Films, Filmstrips, Kinescopes, Phonodiscs, Phototapes, Programmed Instruction Materials, Slides, Transparencies, Videotapes*, 2nd ed., American Library Assoc., Chicago, 1967.

Film Sources

American Association for the Advancement of Science, *AAAS Science Film Catalog*, AAAS, Washington, D.C., 1975.

The American Film Institute Catalog of Motion Pictures Produced in the United States, Bowker, New York, 1971–. Volumes—Film Beginnings: 1893–1910; Feature Films: 1911–1920, 1921–1930, 1931–1940, 1941–1950, 1951–1960, 1961–1970; Short Films: 1911–1920, 1921–1930, 1931–1940, 1941–1950, 1951–1960, 1961–1970; Newsreels: 1908–1920, 1921–1930, 1931–1940, 1941–1950, 1951–1960, 1961–1970.

Arizona State University. Audiovisual Services, Central Arizona Film Cooperative, *16mm Educational Films 1974–75*, Central Arizona Film Cooperative, Tempe, Arizona, 1974.

British Film Institute, *Distribution Catalogue*, British Film Institute, London, 1969.

National Information Center for Educational Media (NICEM), *Index to 8mm Motion Picture Cartridges*, 3rd ed., Univ. Southern California, Los Angeles, 1973.

NICEM, *Index to 16mm Educational Films*, 4th ed., Univ. Southern California, Los Angeles, 1973, 3 vols.

The Second Whole Library Catalog, Access to Film, Films Inc., Wilmette, Ill., 1974–75.

U.S. Library of Congress, Copyright Office, *Motion Pictures*, Copyright Office, Washington, D.C., 1894–. Volumes: 1894–1912, 1912–1939, 1940–1949, 1950–1959, 1960–1969, 1970–.

U.S. Library of Congress, *National Union Catalog: Motion Pictures and Filmstrips*, Edwards Bros., Ann Arbor, Mich., 1948–1957; Rowman and Littlefield, New York, 1958–1962; Edwards

Bros., Ann Arbor, Mich., 1963–1972; Library of Congress, Washington, D.C., 1973–. Volumes: 1948–1952, 1953–1957, 1958–1962, 1963–1967, 1968–1972, 1973, 1974, 1975–.

U.S. Library of Congress, *National Register of Microform Masters*, Library of Congress, Washington, D.C., 1965–.

Filmstrip Sources

Educators Guides to Free Filmstrips, compiled and edited by Mary Foley Horkheimer and John C. Diffor, 26th ed., Educators Progress Serv., Randolph, Wisc., 1974–75.

National Information Center for Educational Media (NICEM), *Index to 35mm Educational Filmstrips*, 4th ed., Univ. Southern California, Los Angeles, 1973, 2 vols.

Phonodisc Sources

Harrison Tape Guide, Sybil Weiss, New York, bimonthly.

National Information Center for Educational Media (NICEM), *Index to Educational Records*, 2nd ed., Univ. Southern California, Los Angeles, 1972.

Schwann: Artist Issue; mono and stereo long playing records, Schwann Music Co., Boston, 1958–.

Schwann Catalog of Country and Western Long Playing Records, W. Schwann Inc., Boston, 1966–.

Schwann Digest of Outstanding New 33⅓ Records, W. Schwann Inc., Boston, n.d.

U.S. Library of Congress, *Music: Books on Music and Sound Recordings*, Library of Congress, Washington, D.C., 1953–.

Van de Voorde, Ronald A., *Basic Record Repertoire for Small Libraries*, Univ. Arizona, Bur. Educ. Res. Serv., Tucson, 1970.

Simulations and Games

Zuckerman, David W., and Robert E. Horn, *The Guide to Simulations/Games for Education and Training*, Information Resources, Lexington, Mass., 1973.

Slides

National Information Center for Educational Media (NICEM), *Index to Educational Slides*, 1st ed., Univ. Southern California, Los Angeles, 1973.

Tapes and Cassettes

Center for Cassette Studies, Inc., *Audio-Text Cassettes*, Center for Cassette Studies, Inc., 1975, 2 vols.

Educators Guide to Free Tapes, Scripts, and Transcriptions, compiled and edited by Walter A. Wittich, 21st ed., Educators Progress Serv., Randolph, Wisc., 1974.

National Information Center for Educational Media (NICEM), *Index to Educational Audio Tapes*, 2nd ed., Univ. Southern California, Los Angeles, 1972.

NICEM, *Index to Educational Videotapes*, 2nd ed., Univ. Southern California, Los Angeles, 1973.

Transparencies

National Information Center for Educational Media (NICEM), *Index to Educational Overhead Transparencies*, 3rd ed., Univ. Southern California, Los Angeles, 1973.

Sampling of Nonprint Sources Available for Various Subject Areas

Educators Guide to Free Guidance Materials, compiled and edited by Mary H. Saterstrom and Joe A. Steph, 13th ed., Educators Progress Serv., Randolph, Wisc., 1974.

Educators Guide to Free Health, Physical Education and Recreational Materials, compiled and edited by Foley A. Horkheimer, 7th ed., Educators Progress Serv., Randolph, Wisc., 1974.

Educators Guide to Free Science Materials, compiled and edited by Mary H. Saterstrom, 15th ed., Educators Progress Serv., Randolph, Wisc., 1974.

Educators Guide to Free Social Studies Materials, compiled and edited by Patricia H. Suttles, 14th ed., Educators Progress Serv., Randolph, Wisc., 1974.

Environmental Information Center, *The Environment Film Review,* Environment Information Center, New York, 1972–.

Guide to Films (16mm) about Famous People, Serina Press, Alexandria, Va., 1969.

Guide to Films (16mm) about Negroes, Serina Press, Alexandria, Va., 1970.

Guide to Free-Loan Films about Foreign Lands, Serina Press, Alexandria, Va., 1975.

Guide to Free-Loan Sports Films (16mm), Serina Press, Alexandria, Va., 1974.

Lieberman, Irving, *A Working Bibliography of Commercially Available Audio-Visual Materials for the Teaching of Library Science,* Illinois Univ., Graduate School of Library Science, Urbana, Ill., 1968 (Occasional Paper No. 94).

National Information Center for Educational Media (NICEM), *Index to Black History and Studies,* 2nd ed., Univ. Southern California, Los Angeles, 1973.

NICEM, *Index to Ecology,* 2nd ed., Univ. Southern California, Los Angeles, 1973.

NICEM, *Index to Health and Safety Education,* 1st ed., Univ. Southern California, Los Angeles, 1972.

NICEM, *Index to Psychology,* 1st ed., Univ. Southern California, Los Angeles, 1972.

NICEM, *Index to Vocational and Technical Education,* 1st ed., Univ. Southern California, Los Angeles, 1972.

Williams, Catharine M., *Sources of Teaching Materials,* College of Education, Ohio State Univ., Columbus, 1971.

JAY E. DAILY

MAPS, CHARTS, AND ATLASES*

Maps and charts are drawings, or other graphic representations, made to a selected scale and orientation. They portray the whole or part of an area, such as the surface of the earth, or extraterrestrial bodies, or the heavens, and permit one to form a mental image of the depicted area. They show the relative position and size of selected human or physical features and themes by the use of signs and symbols. They are most often made on flat, paper surfaces. Sometimes they are made of other materials such as molded plastic to show relief in three dimensions. The flat surface is sometimes designed to be affixed to the surface of a globe to represent the terrestrial or celestial sphere. Maps can be computer generated and the information stored, for retrieval, on cards or magnetic tape. Maps made for

* The Bibliography for this section begins on page 158.

navigation in water, air, and space are called charts. A systematic collection of maps or charts, bound in book format, or looseleaf, is termed an atlas. For the content they represent, atlases are considered viable collections of maps brought together for a definite purpose. They usually contain a legend and explanatory text to make the maps intelligible. The maps should have a uniform format and should be arranged in a logical sequence. A detailed table of contents and an index to place names should also be included.

Maps as graphic forms of communication combine the objective reality they seek to convey and the underlying perception of their compiler. It is said that maps are like idioms, stories, and myths of language, and as such they are subject to similar principles. They function to organize and convey facts about the physical and cultural features of the earth and possess a form that relates to the culture of the mapmaker. Map symbols constitute a universal language which is more easily understood across language and cultural barriers than the verbal or written word.

Maps predate the invention of writing. However, few early maps have survived. By studying those that are extant and observing the mapmaking skills of today's nonliterate peoples, we deduce that the earliest maps were scratched with a stick on the ground, or on cave walls, on clay tablets, and incised on stone, perhaps as long ago as 5000 B.C. Even these early scratchings were made for specific purposes and represented thematic differences that are just as functional and valid today as in antiquity. Primitive man's concept of his world was represented by maps which marked paths and trails, delimited property, and showed hunting and gathering areas, flood plains, and enemy ambush positions.

Primitive man devised other fascinating ways to represent some of the natural features of the region he inhabited. He drew crude maps on animal skins, bark, cloth, and native paper; carved them in bone and wood; or constructed charts of palm fiber and seashells. The Eskimos of eastern Greenland, for instance, have been using for generations, wooden models of islands and coastlines to which they sailed (see Figure 1). And in the Pacific Ocean, natives used stick charts for centuries before the arrival of Western man.

The historical record which survives in graphic form on maps unfolds before us a fascinating portrayal of exploration and advance of civilization. It shows us the rise and fall of nations and the progress of science and technology.

Maps of classical antiquity are represented by some surviving examples of Egyptian and Babylonian records of local areas, preserved on clay tablets, indicating property ownership (cadastral maps), some of which date to ca. 3800 B.C. (see Figure 2).

The Greek concept of the spherical earth is traced to Pythagoras, about 500 B.C. The scientific measurement of the circumference of the earth and the development, about 200 B.C., of a grid system by Eratosthenes, the Greek mathematician and director of the great library at Alexandria, who prepared a world map based on his measurements, contributed greatly to the early development of maps (see Figure 3).

FIGURE 1. *Primitive Eskimo map carved from driftwood and mounted on sealskin. Courtesy of Geography and Map Division, Library of Congress.*

The great geographer and astronomer Claudius Ptolemy (90–168 A.D.), also librarian at Alexandria, laid down the mathematical principles for map and globe making.

The Romans, who ignored the achievements of Greek scientific mapping of the known world, are remembered for larger scale practical road maps of their empire made for the use of the military chief and the provincial governor, or the man of the world—for the practical rather than the speculative type of mind. The most outstanding product of Roman mapmaking is the famous Peutinger Table of ca. 500 A.D. Only a Medieval copy of the map survives. Its name is derived from the 16th-century owner, Konrad Peutinger of Augsburg. This map is more of a road strip map rather than a geographical map. (See Figure 4.) Surviving evidence of detailed city plans is found in the "Forma Urbis Romae," a marble plan of the city of Rome which was affixed to a wall in the church of Saints Cosmas and Damian and is now in a government office under restoration. A reconstruction of it is in a courtyard of the Musei Capitolini. It dates from about 200 A.D. but owes its origins to a map of the first century A.D.

Medieval maps of the Christian Middle Ages, or the Dark Ages, discarded the spherical concept as heretical and reverted to the belief in a flat, circular earth. The doctrine of the spherical earth was forgotten. This period of the Christian theologians' influence on mapmaking is exemplified by the famous encyclopedist

FIGURE 2. *Sixth-century B.C. Babylonian map on a clay tablet. Original in British Library, London.*

and historian Saint Isidore, Bishop of Seville (ca. 570–634). His plain, orbocentric T–O map represents scriptural authority rather than scientific accuracy, which produced symbolic and moral, instead of practical, maps (see Figure 5). These maps were usually circular or oval in shape, with Jerusalem in the center, and showed the known continents "oriented" toward the east, and surrounded by an encircling ocean. The "T" represented the major water bodies of the Nile, Don, and the Mediterranean Sea. Large, elaborate manuscript planispheres or "Mappae Mundi," modeled after the small schematic T–O maps, were popular wall hangings in this era. The information for these maps was taken from sources such as Solinus' *Collectanea Rarum Memorabilium* or *Polyhistor* of ca. 250 A.D., and *Originum Sive Etymologiarum Libri* of Saint Isidore. This period is considered a transitory time between the Greek scientific maps and the revival of Ptolemy.

Paralleling and contrasting the development of the ecclesiastic maps was a type of practical map, or "Portolan Chart," intended for the use of the mariner in navigation. These charts surpassed in accuracy all previous maps. The term "porto-

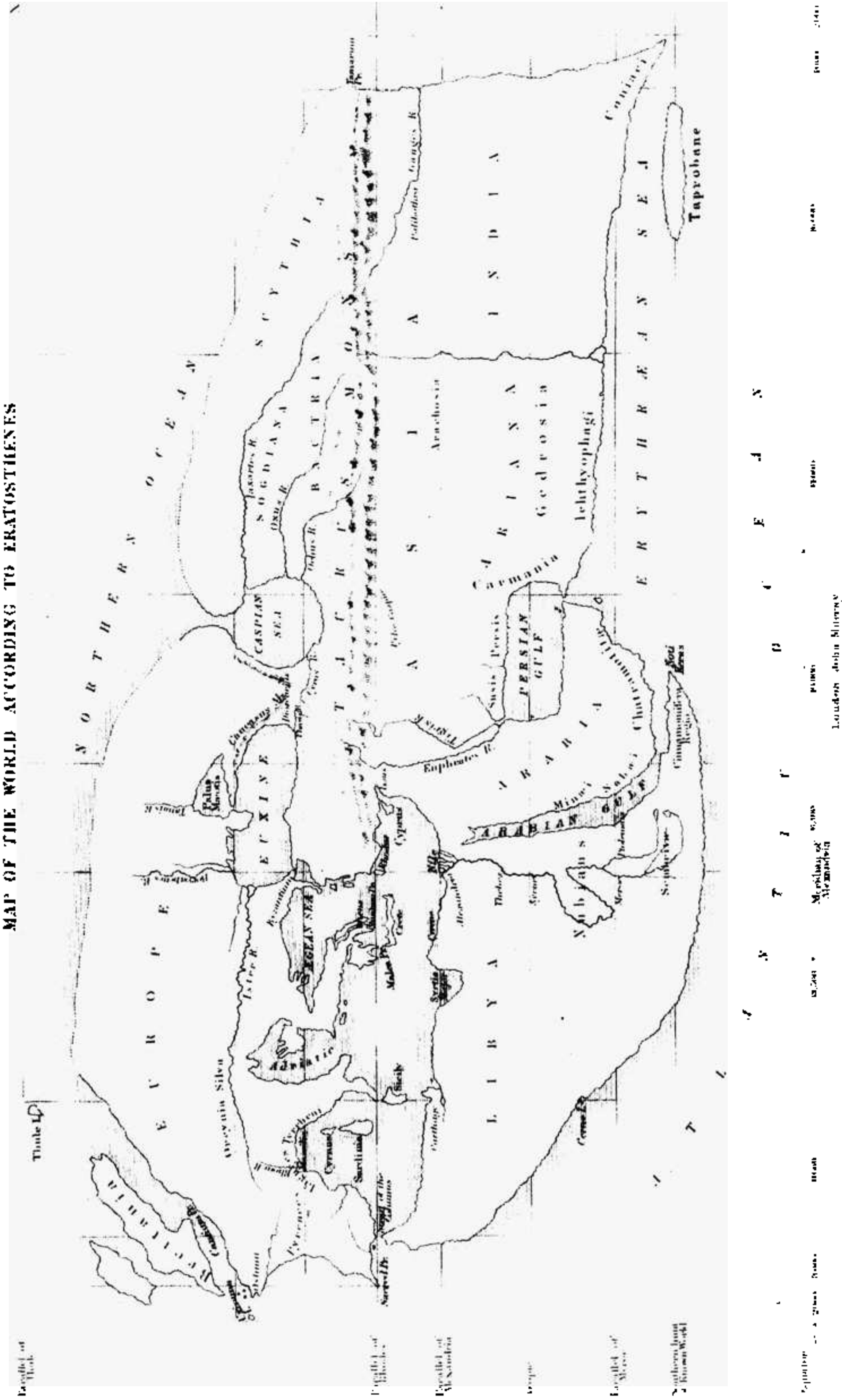


FIGURE 3. *Reconstruction of world map by Eratosthenes. From E. H. Bunbury,* A History of Ancient Geography, *J. Murray, London, 1879.*

FIGURE 4. *Portion of the Roman "Peutinger Table." From F. C. Scheyb,* Peutingeriana Tabula Iteneraria, *Lipsoae, 1753.*

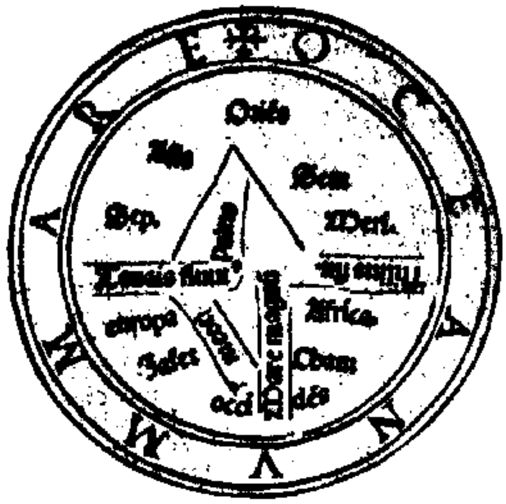


FIGURE 5. *Simple T–O manuscript world map from Isidore of Seville's* Etymologies.

lan" was originally used to describe sailing directions or rutters of the sea. The term was extended to nautical charts because they were essentially sailing directions, or harbor-finding aids, in graphic form.

These charts were handdrawn on vellum and in most cases the entire skin of the animal was utilized. Coastlines were drawn in black ink and ports and coastal features were written perpendicular to the coast. Important harbors were colored red, and sometimes identified with colored flags indicating their political allegiance. Major rivers, some mountain ranges, and vignettes of large cities were also shown. Offshore hazards to navigation, such as rocks and shoals, were indicated by dots and crosses. All portolan charts were drawn on a base of known compass directions and distances between major harbors and principal landmarks. Lines from points of the magnetic compass, known as loxodromes or rhumb lines, criss-cross the chart. The navigator read off his course from a ruler laid across the chart and could steer that course by his compass. Most portolan charts were prepared by Venetian, Majorcan, and Catalan chart makers from the Middle Ages through the Renaissance. The compilation of these charts reached a high standard of utility and beauty, with little change from the earliest prototype. The oldest surviving chart, called "Carta Pisana" because it was found in Pisa, may have been made as early as 1275 (see Figure 6). The earliest dated chart was made in Genoa in 1311 by Petrus Vesconte. Portolan charts changed little in the more than 300 years of their use by seamen, who preferred them over the printed paper versions which became available with the publication of the first woodcut charts. The earliest of these charts was published in Venice in 1539 by Giovani Andrea di Vavassore. The first chart printed from a copper plate was engraved at Venice in 1569 by Paulo Forlani.

The Mediterranean Sea and bordering waters were the principal coverage for these charts. The renaissance of mapmaking began with these charts and it was not until the invention of the chronometer in the mid-18th century that a comparable

FIGURE 6. "Carta Pisana," *earliest extant portolan chart. Original in Bibliothèque National, Paris.*

change in chart making took place (see Figure 7). From this beginning the sea chart evolved through the printed world chart of Gerhard Mercator in 1569, which solved the problem of steering a true rhumb line course—that is, to plot compass courses as straight lines—to the 16th-century charts published in the Netherlands. These culminated in the first sea atlas, Lucas Janszoon Waghener's 1584 *Spieghel der Zeevardt* or *The Mariners Mirrour*.

Contrary to the course of events within the orbit of Latin and Byzantine civilizing tradition, in the Moslem world from the 9th to the 14th centuries, there was a widespread tendency to adapt and develop Greek heritage in all fields of science including mapmaking. Because of the extensive relations of the caliphs, and their far-reaching trading expeditions, the Arabs gathered a rich geographical knowledge. During this period the Moslem world, therefore, continued the tradition of classical antiquity. They recalculated the length of a degree and skillfully employed the principle of their religion, of facing Mecca, to their knowledge of the location of places on maps. The most important contribution to Arab mapmaking was the manuscript world map of 1154 and atlas of 1192 drawn by Muhammed al-Idrisi (see Figure 8). This widely traveled geographer and mapmaker eventually settled at the court of the Norman king Roger II, in Sicily. He became an important link between the Moslem and Christian worlds.

The making of maps in China is chronicled throughout Chinese history. Even in the earliest dynasties it was the duty of each governor to describe and map their lands and waters. The earliest recorded reference to a map in Chinese literature is from 227 B.C. With the invention of paper, by Ts'ai Lun in 105 A.D., local and regional maps were made in all parts of China. As in the West, both scientific and ecclesiastic maps flourished. The religious maps reflected the belief in a flat and square earth, similar to Western Christian beliefs, with Mount Khun Lun replacing Jerusalem at the center. The origin of these beliefs is said to have been introduced with Buddhism from Babylon. Religious maps lasted until the introduction of Western mapmaking to China. Some ancient Chinese maps were similar to the Western orbocentric maps of the Middle Ages, where China was represented as the Middle Kingdom and all other countries as small outlying islands (see Figure 9). Western influence in the mapping of China was introduced by Matteo Ricci, first Jesuit to enter China, in 1582. A Polish Jesuit, Michael Boym, introduced the practice, in 1654, of inscribing placenames in both Chinese and European characters. His maps are also early examples of thematic cartography. He devised symbols to portray flora, fauna, and mineral resources.

It is important to note that scientific mapmaking did not die out as it did in the Middle Ages in the West. As early as the second century A.D., Chang Heng, contemporary with Ptolemy, introduced a grid system. There is a reference to him where he is identified as one who "cast a network about heaven and earth, and reckoned on the basis of it." The father of Chinese mapmaking was Phei Hsiu, who produced a map of the politically organized part of China in 267 A.D. The first printed map, predating Western attempts by three centuries, was published ca. 1155. The first atlas of China, made by Father Martino Martini in 1655, used Chinese

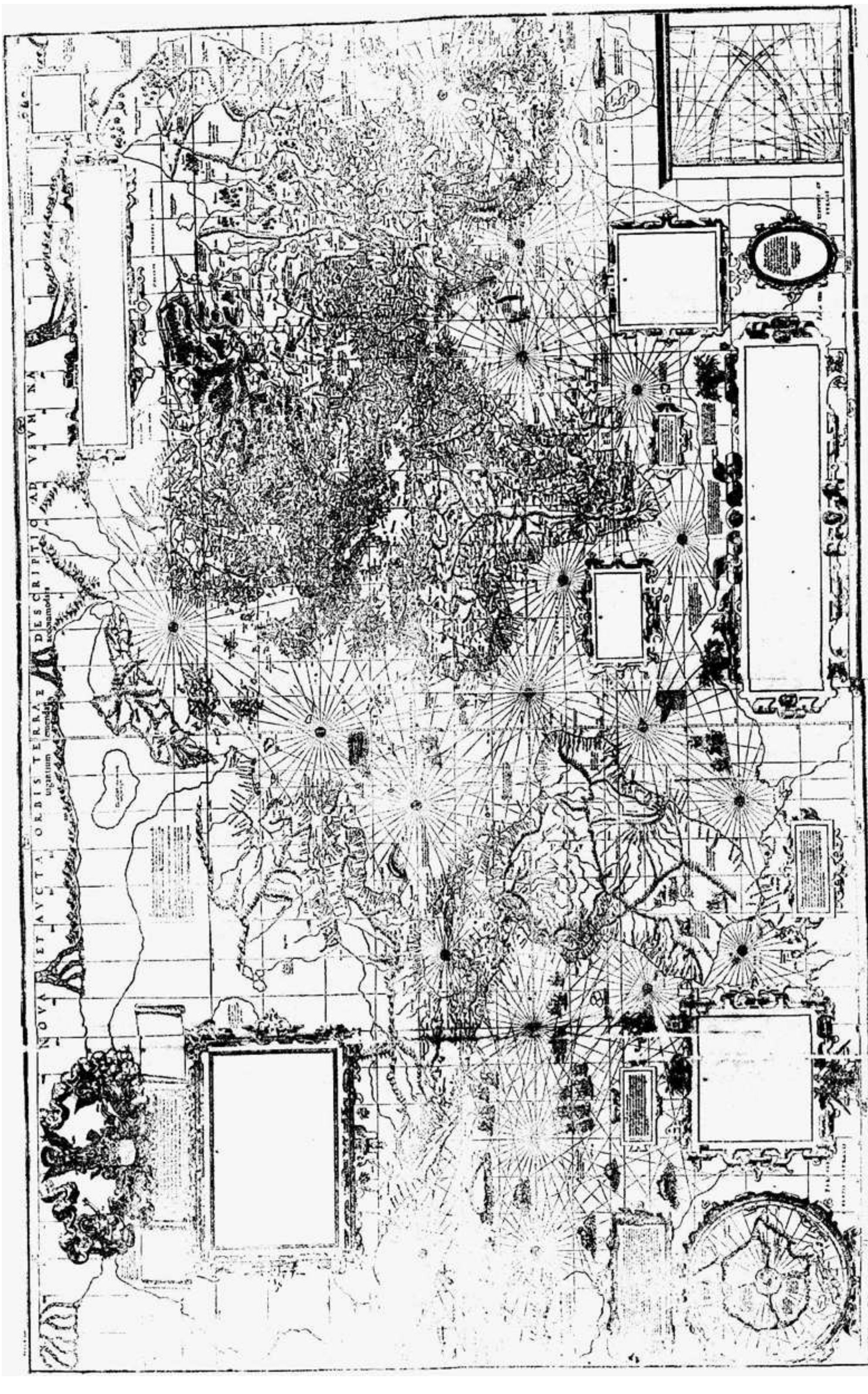


FIGURE 7. *Gerhard Mercator's 1569 chart of the world on his famous projection. From redrawing in* Bull. Amer. Geog. Soc., **11** (1879).

FIGURE 8. *Redrawing of Idrisi's 1192 manuscript map of the world. From Konrad Miller,* Mappae Arabicae, *Stuttgart, 1926.*

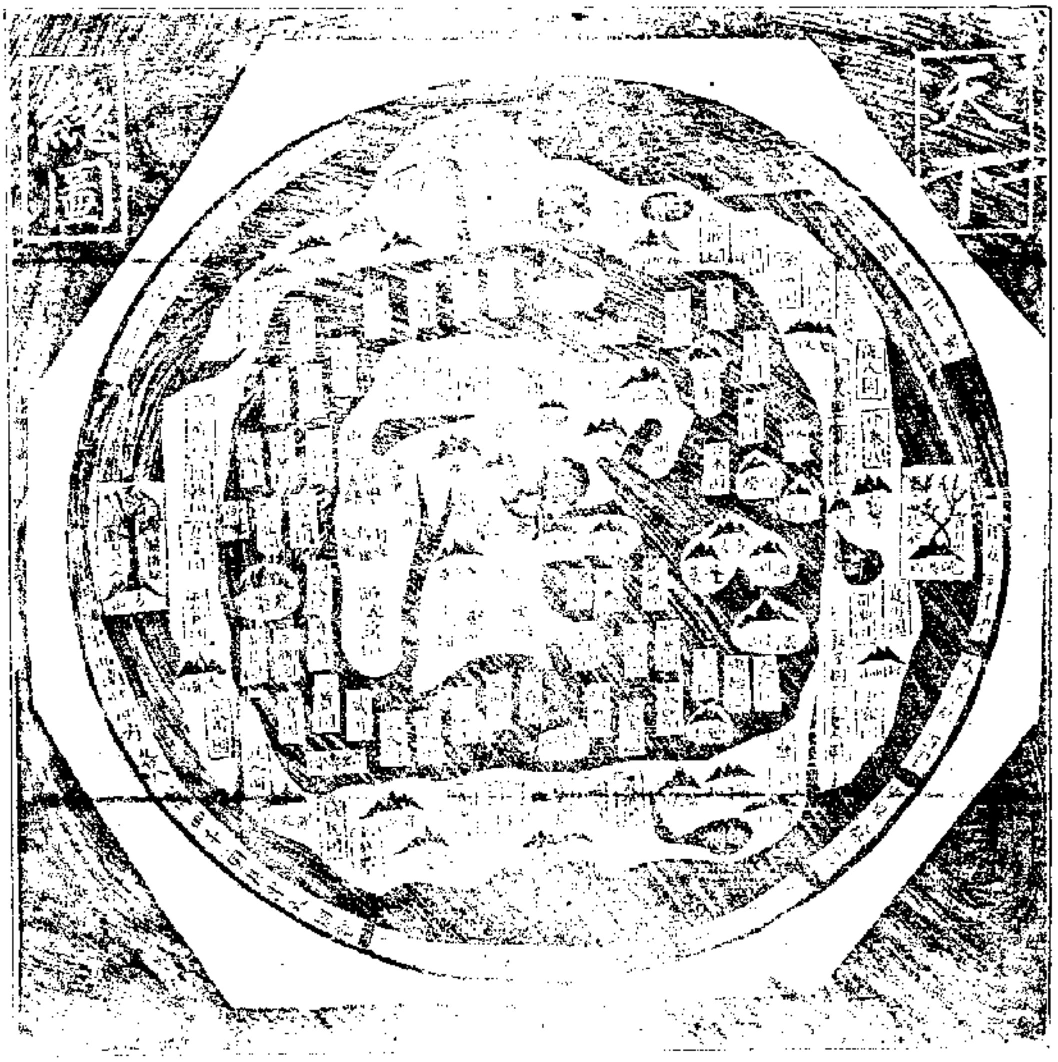


FIGURE 9. *Early Chinese orbocentric map showing China as the Middle Kingdom. From* Bull. Amer. Geog. Soc., **36** (1904).

sources and made information about China available to the Western world. Many surviving examples of Chinese maps, beginning with the Ming Dynasty, were printed from wood blocks and drawn or painted on silk or rice paper (see Figure 10).

The Italian Renaissance is credited with the revival and rediscovery of the works of Claudius Ptolemy which, as the earlier portolan charts, contributed to scientific mapmaking. This rediscovery of classical knowledge led to the translation into Latin of his famous *Geographia,* originally compiled in the second century A.D. This work dominated cartography for over 1,500 years. Renaissance discoveries were incorporated by adding new maps in later editions of the work. The first printed edition of the *Geographia,* with maps, was published in Bologna in 1477

FIGURE 10. *Chinese map, ca. 1690, painted on silk showing Manchurian troops besieging a Russian fort on the Amur River. Courtesy of Geography and Map Division, Library of Congress.*

(see Figure 11). Soon editions printed from copper engravings and wood blocks were published.

The great discoveries of the 15th and 16th centuries opened up vast new territories and aroused such interest in the rapidly expanding world that mapmaking became an important and lucrative profession. Before the invention of printing from type and engraving in wood and copper, maps were laboriously made by hand and were, necessarily, in short supply. Printing of maps soon developed into an important graphic art. The first printed map is a simple form T–O woodcut. It was printed in Augsburg in 1472 to illustrate Saint Isidore's *Etymologiae.* In this period the practice of binding groups of maps into book form helped develop and popularize the lucrative production of geographical atlases, which has not diminished to this day. Renowned examples of pre-atlas binding of groups of printed maps are the Italian volumes which bring together maps made in the middle decades of the 16th century by a galaxy of talent from Roman and Venetian schools of cartography. These are collectively attributed to Antonio Lafreri, a native of Burgundy who established a mapmaking firm in Rome (see Figure 12).

In the latter part of the 16th century, major world trade routes shifted from the Mediterranean to the Atlantic, with a consequent migration of the center of map trade from Italy to Northwest Europe. This shift is marked by the production of two noteworthy landmarks in mapmaking, the famous *Theatrum Orbis Terrarum* atlas of Abraham Ortelius (see Figure 13), published in Antwerp on May 20, 1570, which is considered the first "modern" atlas; and the appearance in 1595 of Gerhard Mercator's *Atlas Sive Cosmographicae Meditationes Fabrica Mundi,* initially published in Duisburg and first to apply the word "atlas" to a volume of maps (see Figure 14). Revisions of both Ortelius' and Mercator's atlases were published over a long period of years.

Renaissance maps which show New World discoveries include the oldest, a portolan chart of the world of about 1500, made by Juan de la Cosa, one of Columbus' pilots (see Figure 15); Martin Waldseemuller's 1507 wall map of the world on which the first use of the name "America" is applied; and a world map by Johannes Ruysch, in Ptolemy's *Geographia* dated 1508, the earliest printed map to show the New World (see Figure 16).

Dutch mapmaking of the 17th century enjoyed a rich market for both maps and atlases because of the many wealthy merchants and traders who were interested in geography. Foremost among Dutch mapmakers was the firm established by William Janszoon Blaeu, which occupied a leading position in the business for almost a century. This firm published large-size, beautifully decorated and illuminated atlases, some having as many as 12 volumes (see Figure 17). Unfortunately, toward the end of the century these maps were becoming more decorative than scientific, with errors often perpetuated through many editions, due mainly to the expense of altering copper engraving plates. French development of more modern scientific techniques contributed to the decline of Dutch mapmaking.

The 18th-century scientific attitude in this "Age of Reason" gave birth to scientific mapmaking. It fostered the use of new instruments such as the chronometer

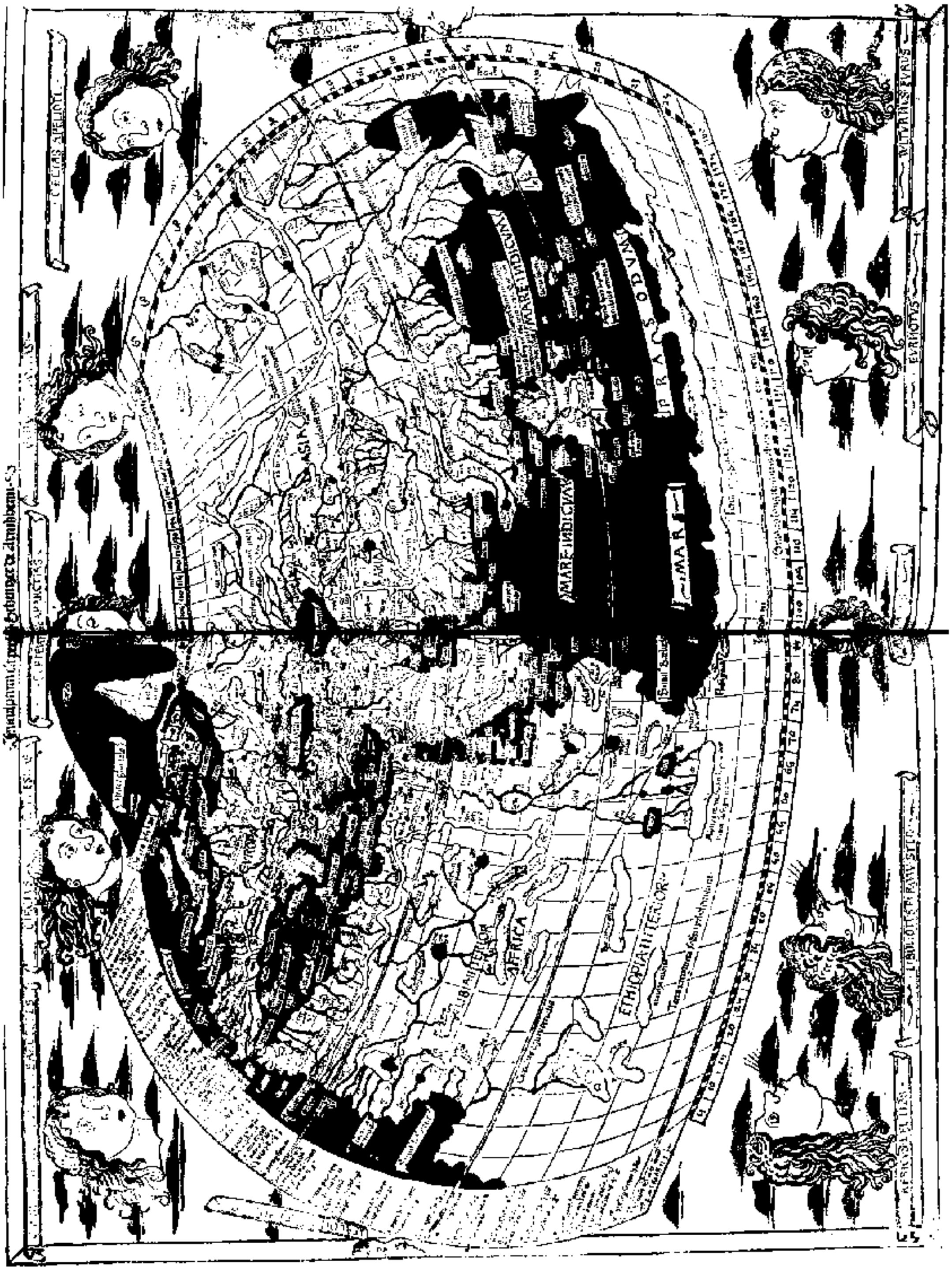


FIGURE 11. *Ptolemy's world map from the 1482 Ulm edition of the* Cosmographia. *Courtesy of Geography and Map Division, Library of Congress.*

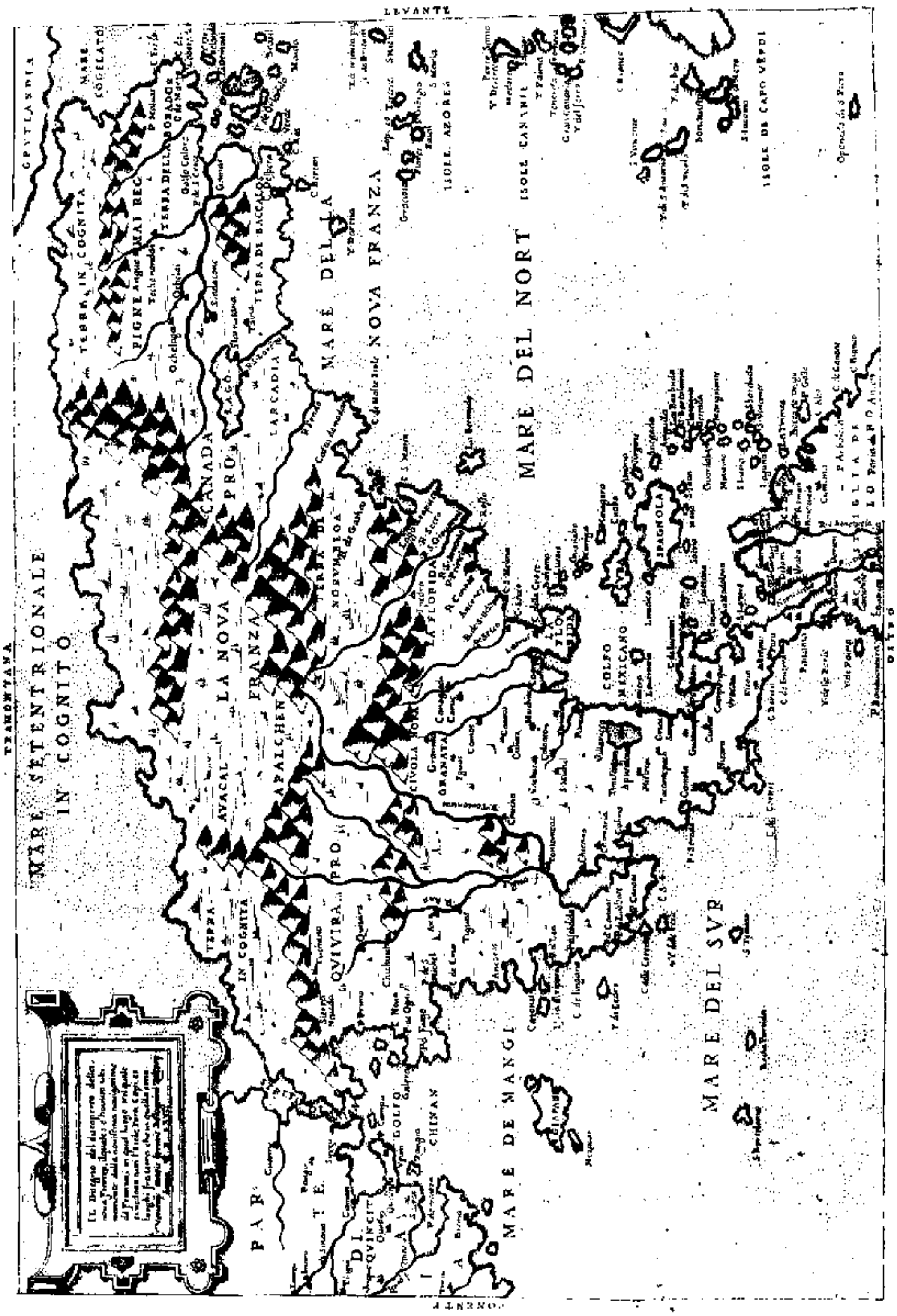


FIGURE 12. *Example of Venetian New World map of 1566 bound in Antonio Lafreri's volume of maps. Courtesy of Geography and Map Division, Library of Congress.*

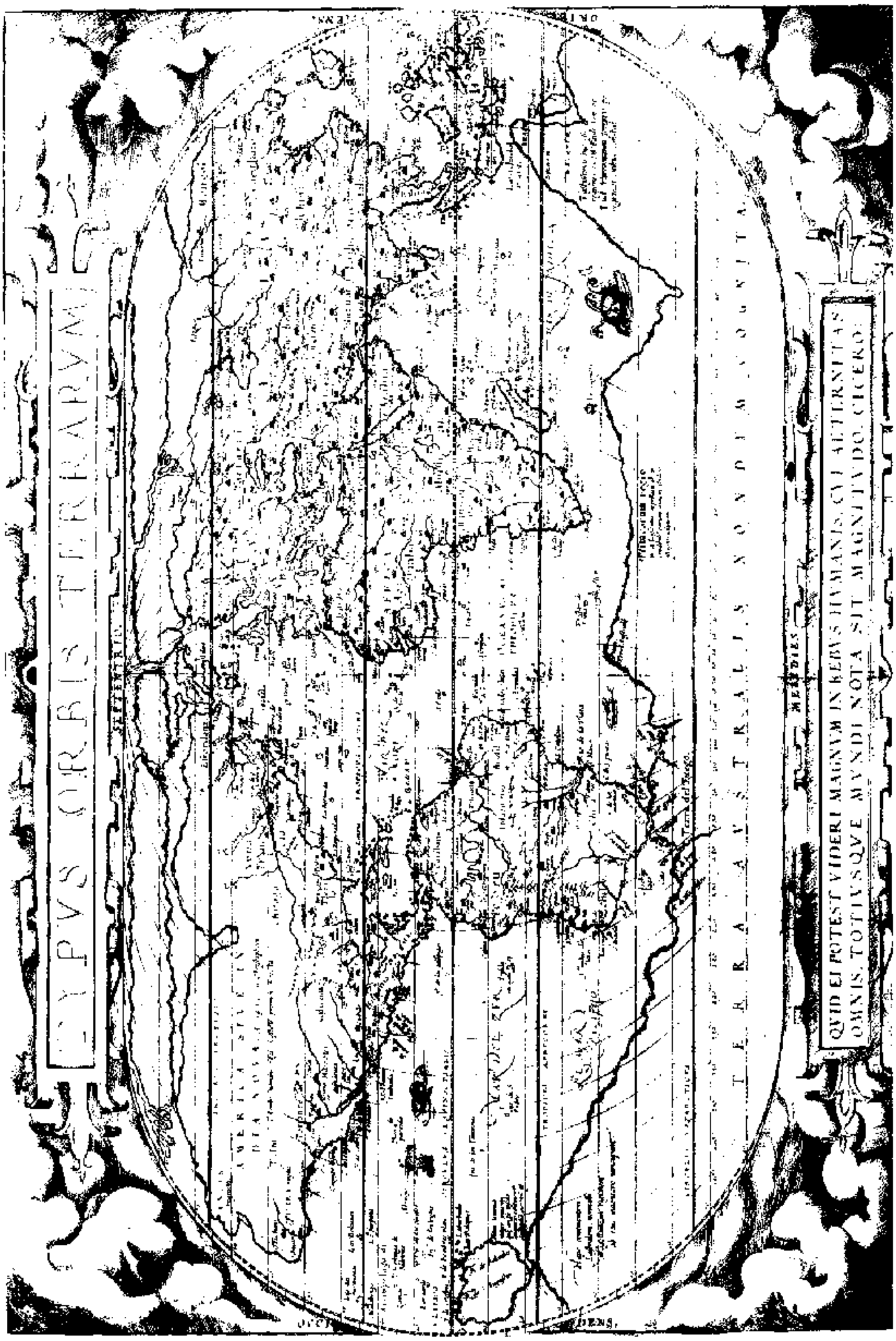


FIGURE 13. *World map from Ortelius'* Theatrum Orbis Terrarum. *Courtesy of Geography and Map Division, Library of Congress.*

FIGURE 14. *Title page of Mercator's work showing the first use of the word "atlas." Courtesy of Geography and Map Division, Library of Congress.*

for easily reading longitude at sea, perfected a method of triangulation on land, and at the close of the century introduced the theodolite, which increased the ease and accuracy of measuring angles.

Dutch maps were made for profit and quick turnover, and therefore attractiveness overshadowed accuracy. The French mapmaker's motive was scientific reputation and not monetary profit. Stimulus for scientific mapping came from the French Academy of Science, under whose auspices an accurate technique for measuring

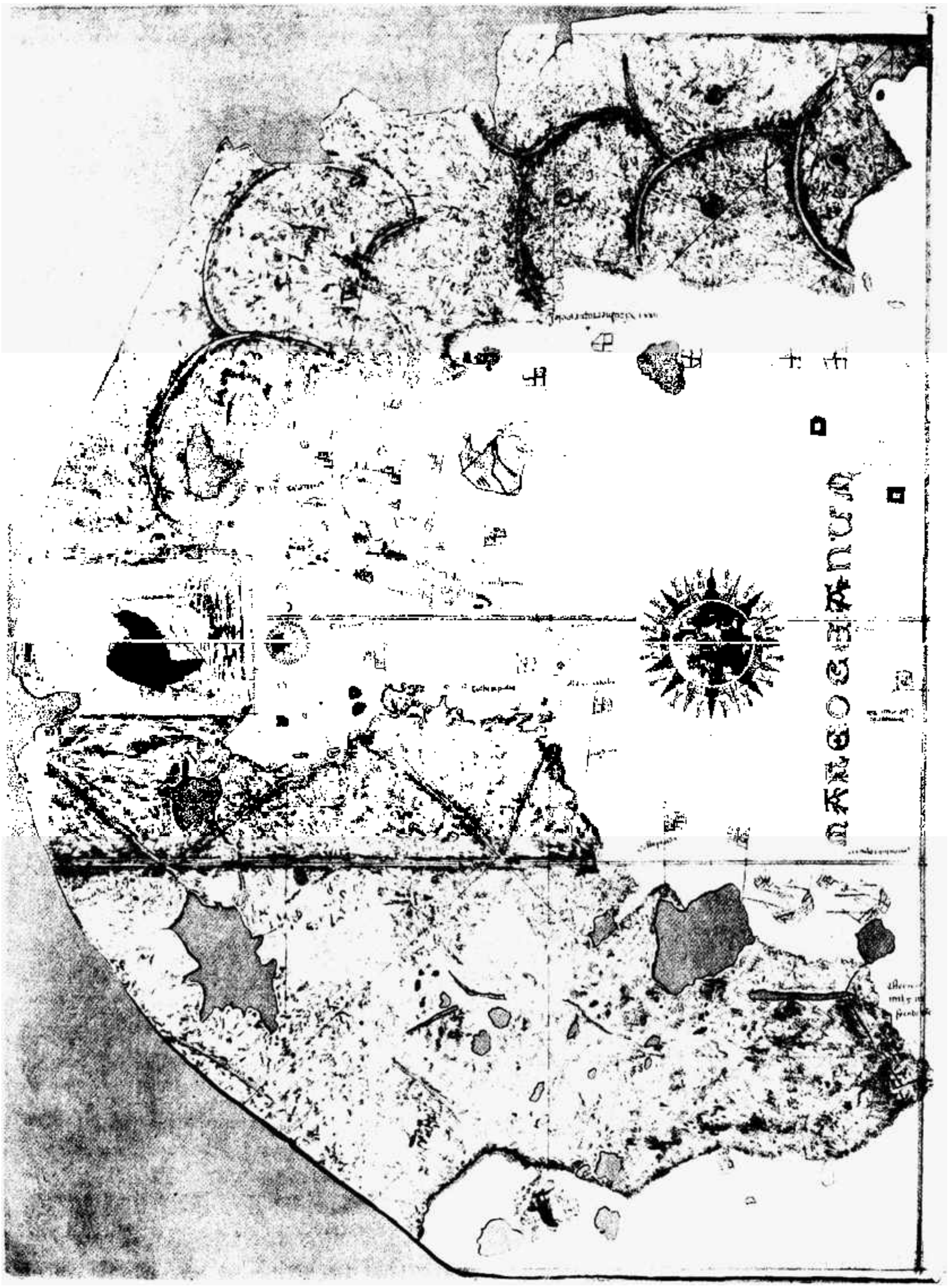


FIGURE 15. *Western portion of La Cosa's chart of the world ca. 1500. Earliest manuscript map to show the New World. Original in Naval Museum, Madrid.*

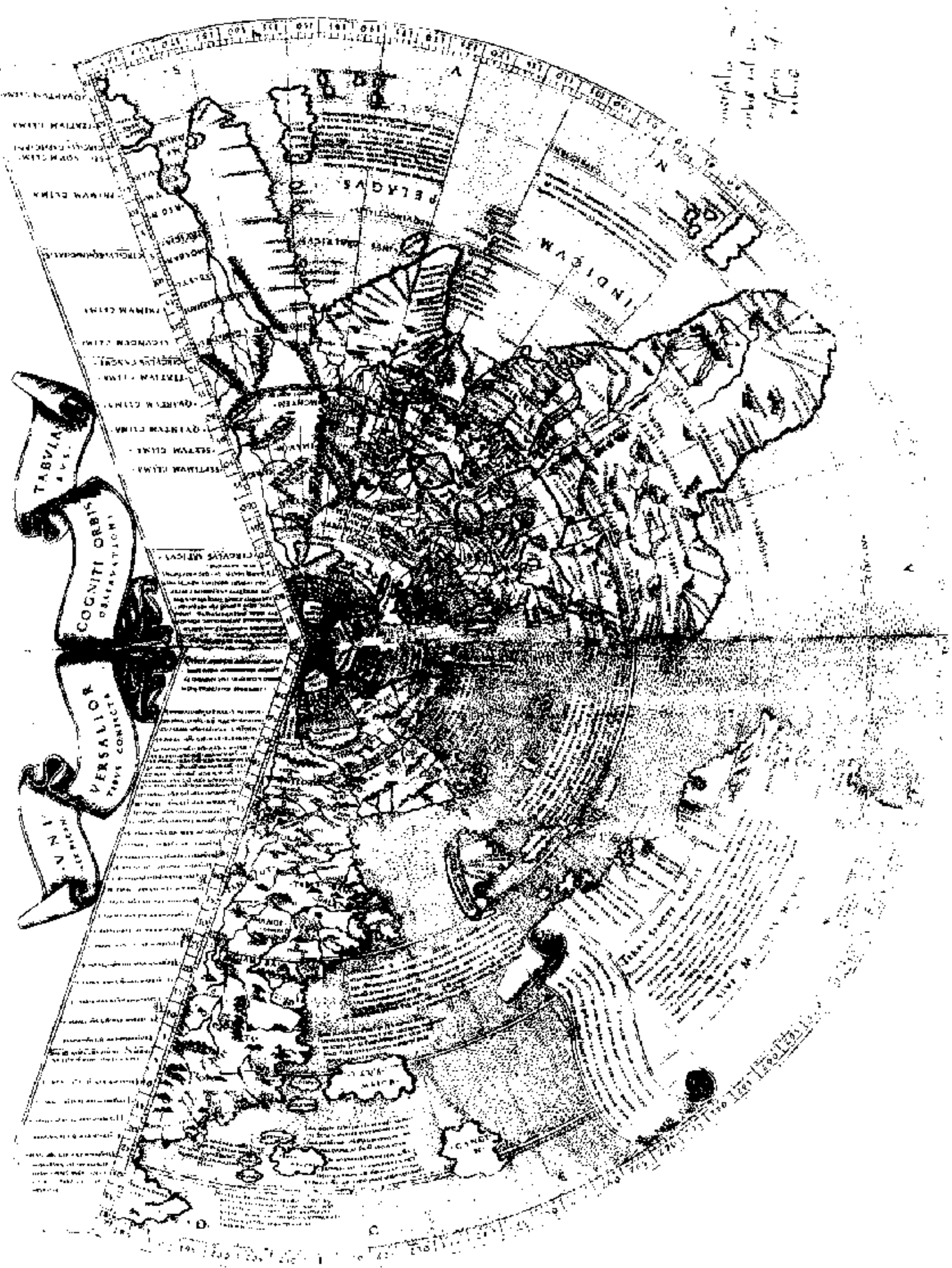


FIGURE 16. *Earliest printed map to show the New World. From Ptolemy's* Geographia *dated 1508. Courtesy of Geography and Map Division, Library of Congress.*

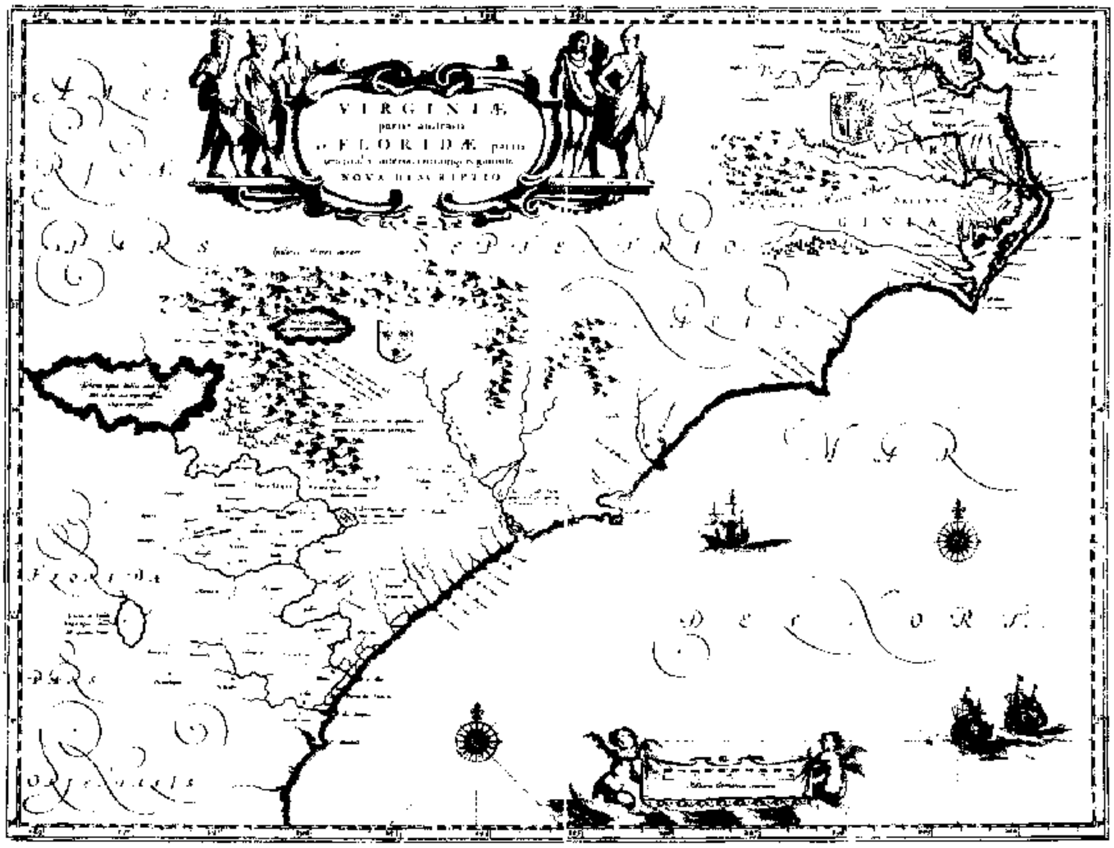


FIGURE 17. *Example of William Blaeu's 17th-century decorative atlas maps. Courtesy of Geography and Map Division, Library of Congress.*

longitude was developed. This gave birth to large-scale national topographic surveys. The first of these great systematic surveys was pioneered under the direction of the illustrious Cassini family. It began with the triangulation of France in 1733. This became the geodetic base for the detailed, 182-sheet "Carte Geometrique de la France" at the scale of 1:86,400, which was completed in 1789. Soon large-scale map surveys were initiated by other European countries. These maps became essential tools for military planning so necessary in this time of nationalistic warfare waged by the European powers. These events led to the establishment by all European countries of official mapping agencies and helped establish mapmaking as an official function of government (Figure 18). About 75% of all maps are now published by national and local government mapping departments.

Excellent commercial maps and atlases produced at this time complemented officially produced maps and helped continue interest in the colonization of overseas possessions (see Figure 19), which, in turn, increased the demand for more and better maps for all parts of the world. The impetus to American mapmaking

FIGURE 18. *Example of mid-19th century, large-scale, national topographic map. Sheet 19 of General G. H. Dufour's maps of Switzerland at the scale of 1:100,000. Courtesy of Geography and Map Division, Library of Congress.*

came early in the 19th century. Official U.S. mapmaking had its beginning with George Washington's appointment of Robert Erskine as geographer and surveyor-general to the Continental Army in 1777. The passage of the Land Ordnance of 1785, and the appointment of Thomas Hutchins to head the U.S. General Land Office, now the Bureau of Land Management, established the rectangular system of surveying and dividing of America's western lands.

Nineteenth-century printing inventions enabled maps and atlases to be produced inexpensively and in great quantity. This availability helped disseminate geographic information about the United States to the public and gave stimulus to further exploration, rail travel, and the settlement of the West (see Figure 20). The establishment of the U.S. Geological Survey in 1879, for making detailed maps of the country at uniform scale, brought the United States to the level of official mapping in Europe.

The advent of the regular large-scale topographical surveys in most countries ushered in the period of modern mapping. Mapping on a worldwide uniform base had its beginning in 1891 when the German geographer Albrecht Penck proposed an International Map of the World (IMW) at the scale of 1:1,000,000. This "Millionth Map of the World," a cooperative project undertaken by various governments, is now administered by the Cartographic Office of the United Nations Secretariat. It is the aim of the project to make available a multipurpose map of the entire world on a convenient scale. The publication of the map sheets is governed by a common system with uniform specifications. It provides a basic tool for efficiently carrying out studies and surveys.

Twentieth-century map production was stimulated by the two World Wars and great technological developments and improvements in mapmaking instrumentation. This high level of production continues today and is complemented by commercial map production, which benefits from government research and innovations.

Today, sophisticated computers are being programmed to store and generate complex spatial information in digital form. To understand and interpret this data, it is necessary to retrieve and display the information in graphic form. The information may be displayed traditionally, as printed maps and atlases, or as computer printouts, and as visual images on computer terminals.

The U.S. Defense Mapping Agency Topographic Center has made significant progress in establishing an automated digital topographic mapping capability for standard military maps at the scale of 1:50,000. Since the early 1960s this agency has gathered digital data to produce terrain models and other cartographic formats. As automated mapping and photogrammetric equipment developed, they were coupled with specially designed computer programs. These programs provided digital data in printed form, enabled maps to be published faster, and provided economical update of information (see Figure 21).

Other specialized users of topographical information are preparing data banks for graphic information acquisition, storage, and retrieval. These have the capability of producing thematic maps which show a variety of information such as

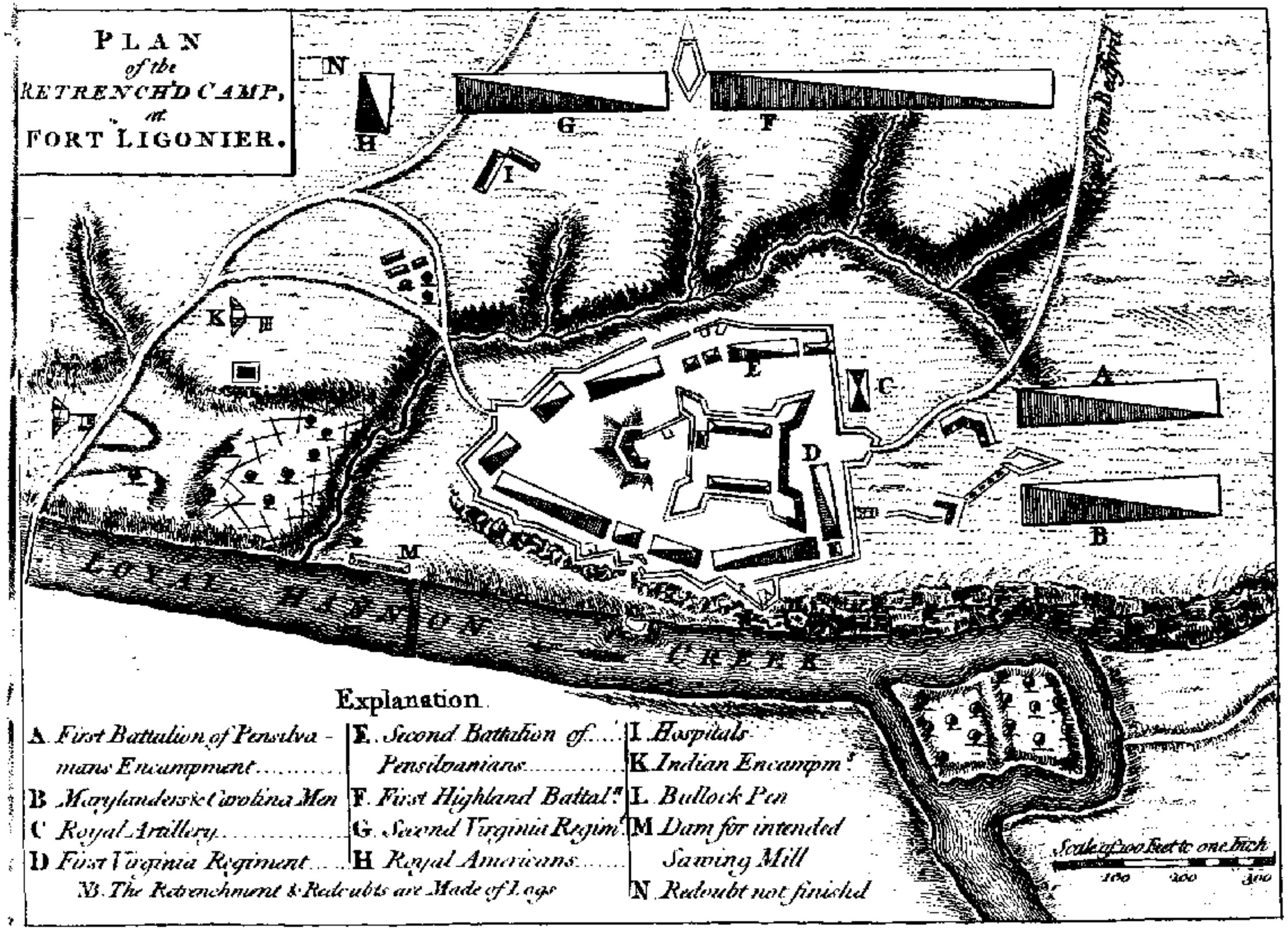


FIGURE 19. *1763 map of Fort Ligonier. Example of mid-18th century fortification map published by Jean Rocque in London for interest in overseas possessions. From* A Set of Plans and Forts in America *(London, 1763).*

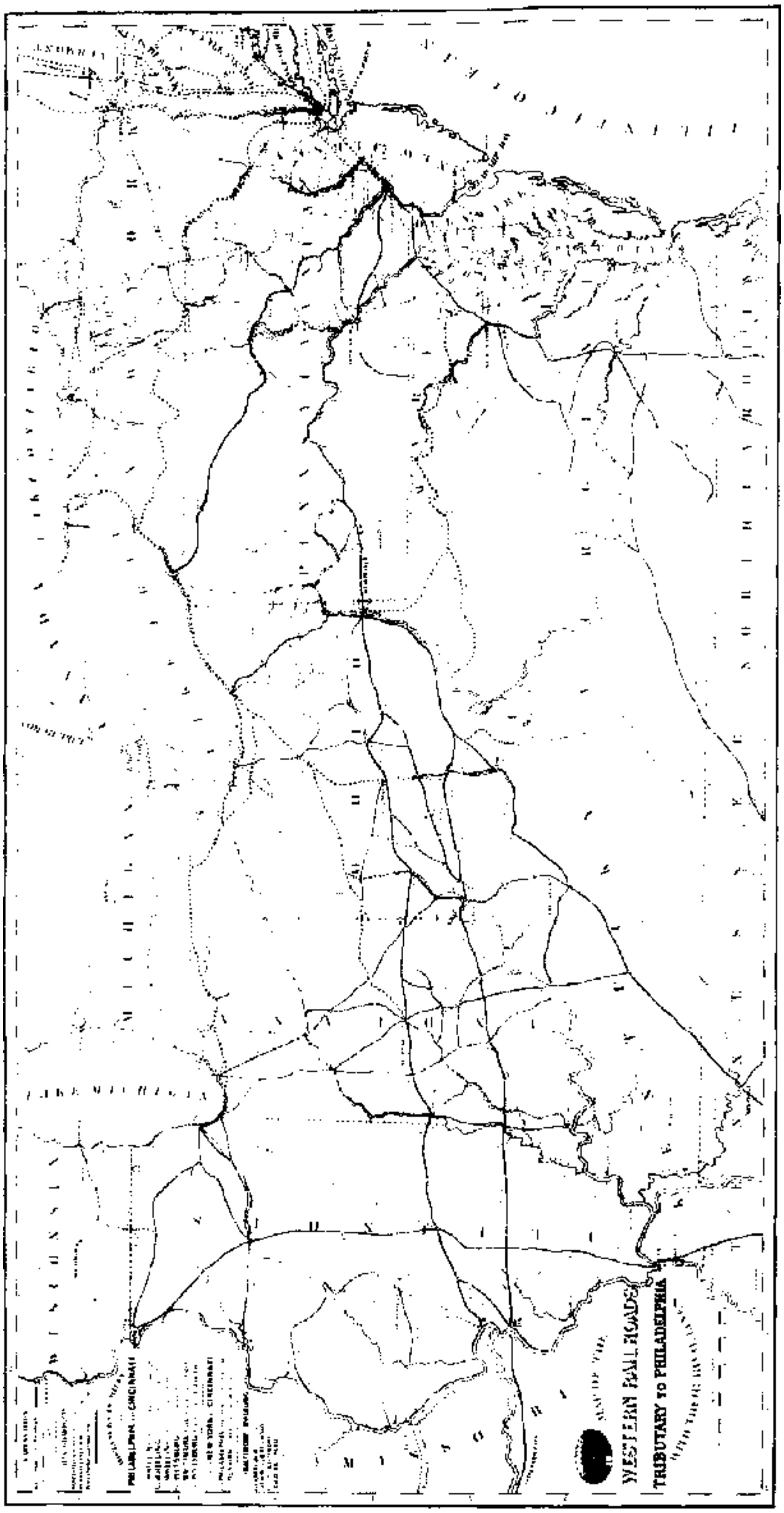


FIGURE 20. **Western Railroads,** *by Charles Ellet. Example of a 19th-century railroad map for encouraging travel to the U.S. West. Courtesy of Geography and Map Division, Library of Congress.*

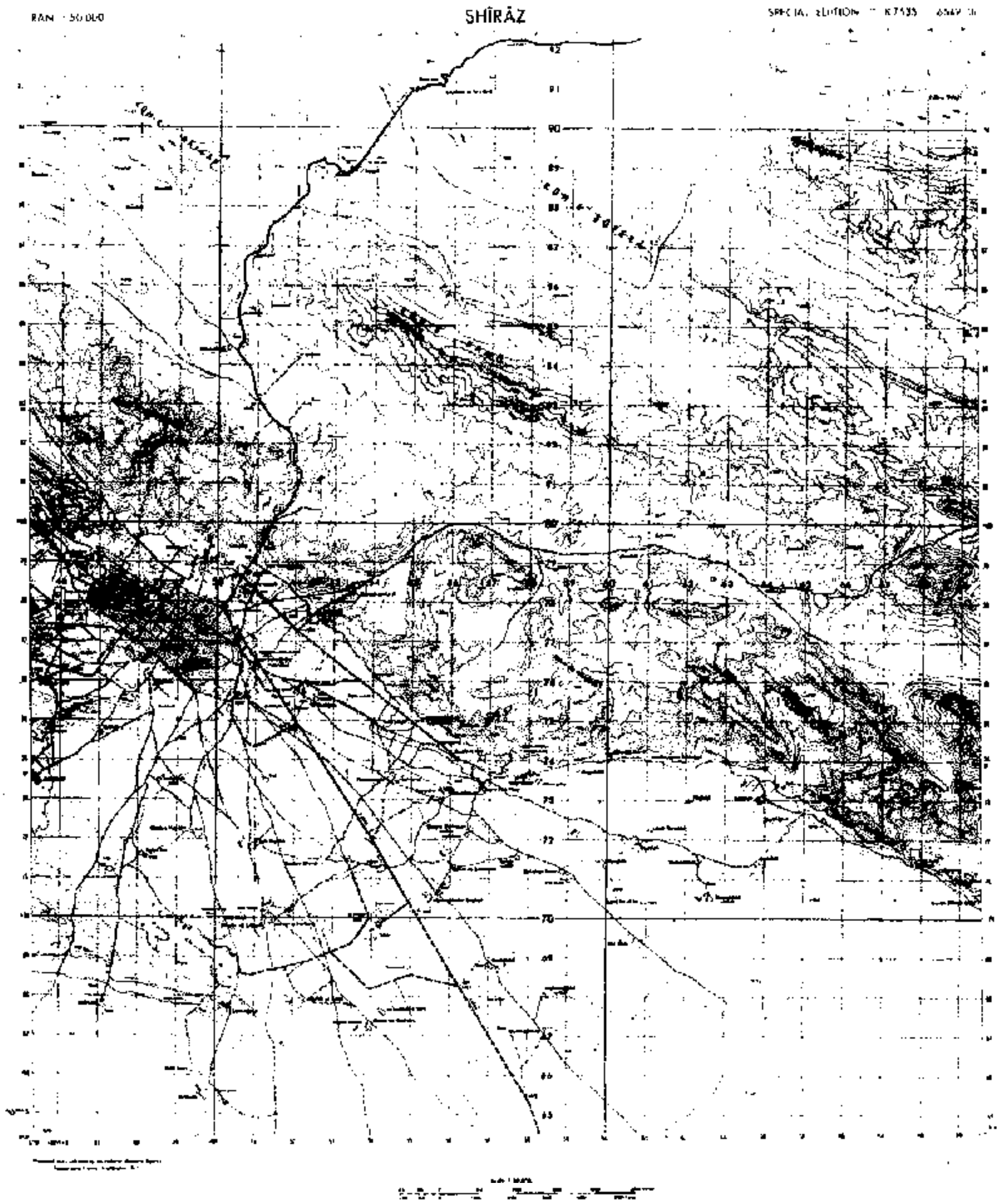


FIGURE 21. *Military map generated by computer. Courtesy of Defense Mapping Agency, Topographic Center.*

vegetation classification, land use, soil types, and population distribution. This data is usually organized to provide outline map work, such as boundaries and grids, as one output, and descriptive or thematic information as a separate output.

It is important to note that because of security restrictions in many countries, scholars and researchers are denied access to many of the most accurate, detailed, and current maps of their own countries and foreign areas, produced by military and intelligence agencies. Some of these maps remain classified for many years and are not available in most map libraries.

Types of Maps, Charts, and Atlases

Maps may be classed into four broad groups: (*a*) small-scale general maps of large areas; (*b*) large-scale, detailed topographic maps of smaller areas; (*c*) large-scale navigation charts for use in water, air, and space; and (*d*) special purpose, or thematic, maps that illustrate any subject data which can be symbolized and represented graphically.

It is not possible to describe all the different types of maps which are produced. It is, however, important to note examples of officially produced maps, for they represent about 75% of the world's map output and some of the more popular commercial maps and atlases. In the United States, federal, state, county, and municipal surveying and mapping agencies are responsible for the bulk of map production. Major producers of maps and charts in the federal government are Defense Mapping Agency, National Ocean Survey, Geological Survey, Forest Service, and, particularly for thematic and computer-generated maps, the Bureau of the Census. The Defense Mapping Agency's Topographic Center and the Topographic Branch of the Geological Survey are the primary agencies which publish large-scale topographic maps. Such maps are the ultimate source material for compiling small-scale maps. Because government maps are not published in great quantity, commercially produced maps are also of great importance. Private mapping firms publish, sell, or distribute school wall maps, road maps, transportation maps, and maps which illustrate atlases, textbooks, and guidebooks.

Small-scale general maps represent the physical or visible environment and require accurate measurement to show the actual relationship between the portrayed features. General maps depict multiple types of information such as relief, drainage pattern, vegetation, cities and towns, transportation networks, and other man-made improvements. General maps cover worldwide areas, countries, regions, states, and smaller administrative and physical units.

Topographic maps possess the same properties as the general maps described above. They differ from general maps by a multisheet uniform format, and a scale large enough to distinguish the shape and elevation of terrain feature. Such a collection of map sheets, forming a bibliographic unit usually associated with a common publisher, author, or subject, is referred to as a "set of topographic maps." The official topographic maps of the United States, and the most commonly used, are those published by the U.S. Geological Survey (see Figure 22). This agency is charged with making the basic topographic maps to cover the entire country. Since its creation in 1879, the Survey has completed 90% of the large-scale (i.e., 1:24,000 to 1:62,500) mapping of the 50 states. Approximately 60% is now available at the largest scale. Keeping these sheets up-to-date is a constant task, and in the past, field checking and conventional printing of revisions was very

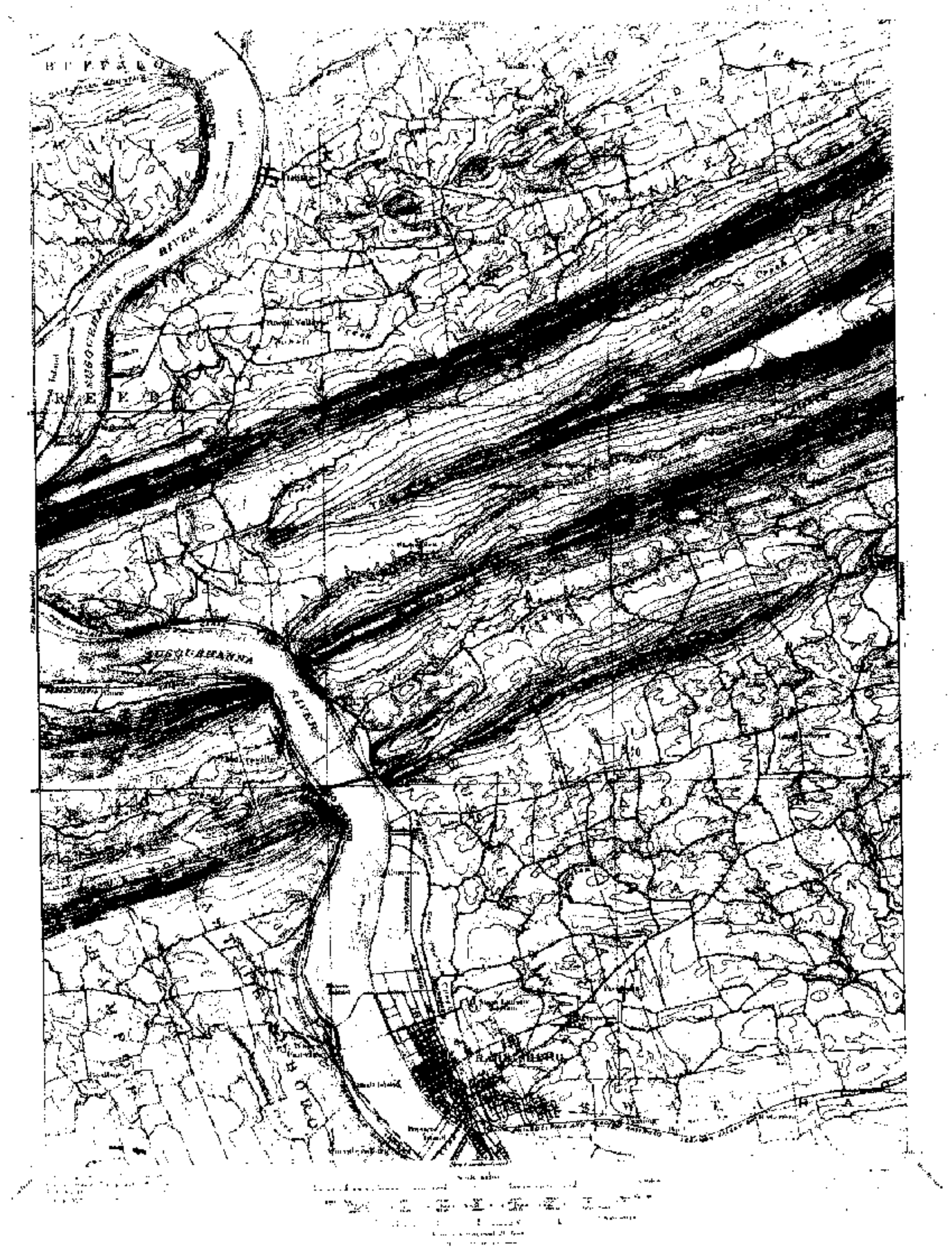


FIGURE 22. *U.S. Geological Survey's standard topographic map. Courtesy of Geography and Map Division, Library of Congress.*

time consuming. In 1967 an important new photorevision technique was implemented for quickly updating and photorevising the map sheets, especially in those areas where urban growth and rapid change in roads, land use, and residential areas occurs. A distinguishing purple overprint of the update information is applied to the revision sheet. This differentiates the interim photorevision from the conventional field-checked data.

An experimental type of topographic map in limited use since 1961 by both the military and the U.S. Geological Survey is the Orthophotomap. This is a map on which the physical and cultural features of a specific area are depicted by color-enhanced photographic images in correct orthographic position—that is, the surface of the area is projected directly onto the surface of a plane. Lettering, boundaries, and relief symbols are annotated directly on the image. The advantage of this type of map is in the speed of its production. It can be completed within 24 hours from the time the photography is taken. A regular topographic sheet requires up to 3 years from survey to printing.

Navigation charts are among the most widely used of large-scale special purpose maps. There are two basic chart types. Large-scale nautical charts, designed for mariners, show the nature of the coast, offshore hazards, anchorages, soundings, and symbols for safe guidance (see Figure 23). Aeronautical charts used in aerial navigation identify topography, airports, radio signal frequencies, and obstructions to air navigation. Both types are indispensible graphic aids to navigation. In the United States the major publishers of nautical charts are the Defense Mapping Agency's Hydrographic Center, which publishes foreign area charts, and the U.S. National Ocean Survey, which publishes charts of United States coastal waters (see Figure 24). Two primary aeronautical charts for both civil and military aviation are the Instrument Navigation Chart, used with radio and instrument navigation, and the Visual Navigation Chart designed for visual flight with reference to features on the ground. Military aeronautical charts are produced by the Aerospace Center of the Defense Mapping Agency, and charts for civilian aviation are published by the U.S. National Ocean Survey (see Figure 25).

Thematic maps, which include distribution and statistical maps, usually show the nonvisible environment which exists but is not physically visible. Special maps present the data of various sciences. They show the geographical factors affecting the study of the physical environment and of the life and society within this environment. Economic and social conditions, health and disease, population distribution and density, agricultural and industrial production, political boundaries, climatic and weather conditions, geology, land use, and soils are examples of the information that can be shown on thematic maps. A map may be qualitative, mapping distribution or identifying a particular quality such as vegetation or soils, or it may be quantitative and present statistical data with specific percentages, ratios, or other absolute quantities. Choropleth maps are colored or shaded according to the value or amount of the data being mapped (see Figure 26). Special subject maps are commonly found in general and thematic atlases.

Geologic maps, also a type of thematic map, are issued as large-scale, multi-

FIGURE 23. *Foreign area navigation chart published by the U.S. Defense Mapping Agency, Hydrographic Center. This chart was printed on nylon. Courtesy of Geography and Map Division, Library of Congress.*

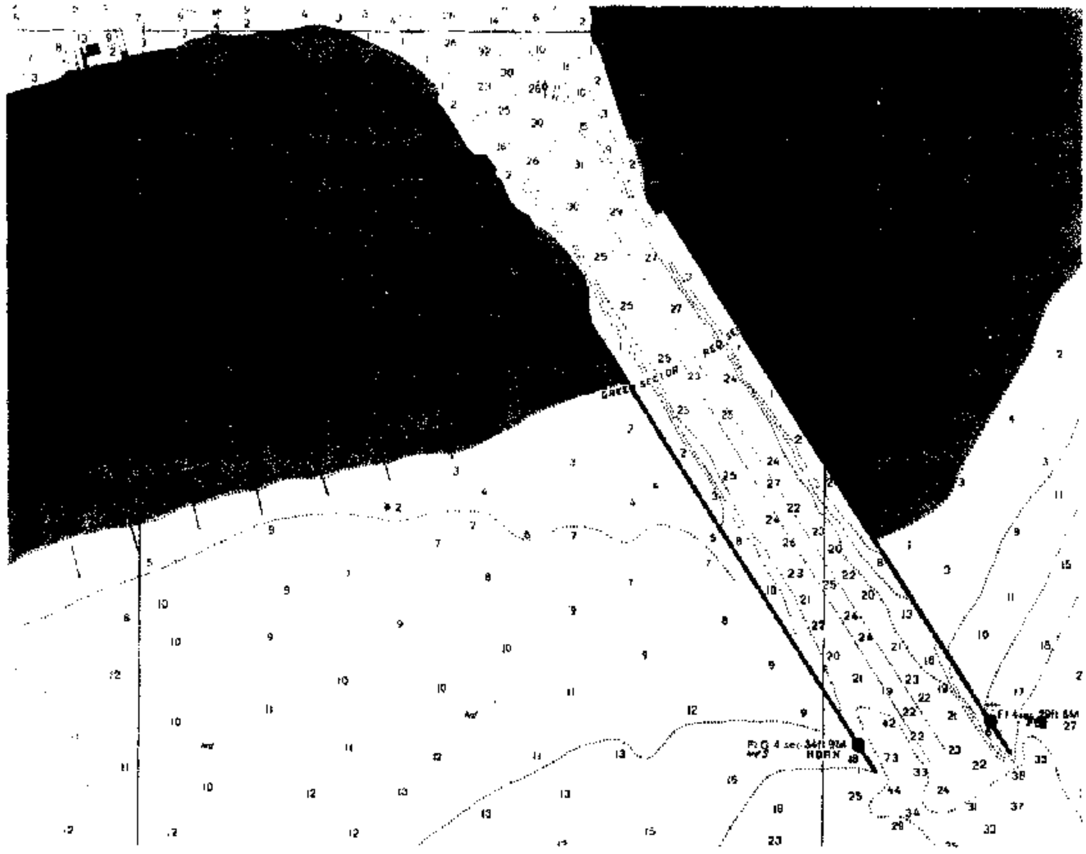


FIGURE 24. *National Ocean Survey's large-scale U.S. coastal chart. Courtesy of Geography and Map Division, Library of Congress.*

sheet set maps; or as single-sheet country, state, or regional maps; and as atlas or textbook maps. They show the distribution of rocks and other deposits which occur at the surface of the earth as though the soil were stripped away. They indicate such geologic conditions as the age of rocks, location of fossils, and fault lines. They are used for locating mineral deposits, for planning resource development, and for engineering projects.

Weather maps, prepared by the National Weather Service, are widely distributed and are published daily in many newspapers. Data gathered from hundreds of weather stations throughout the country are plotted on an outline map using an international code system. Weather fronts, barometric pressure, and wind velocity and direction are among the data mapped.

The indispensable state and city road map is the most popular example of commercial cartography. Road maps show several classes of highways, locate towns, and indicate mileages. For a half century or more road maps have been distributed free by service stations. Today high production costs have forced the publishers of road maps to reevaluate their distribution practice, and some road maps are now dispensed from coin-operated machines.

FIGURE 25. *U.S. standard aeronautical chart. Courtesy of Geography and Map Division, Library of Congress.*

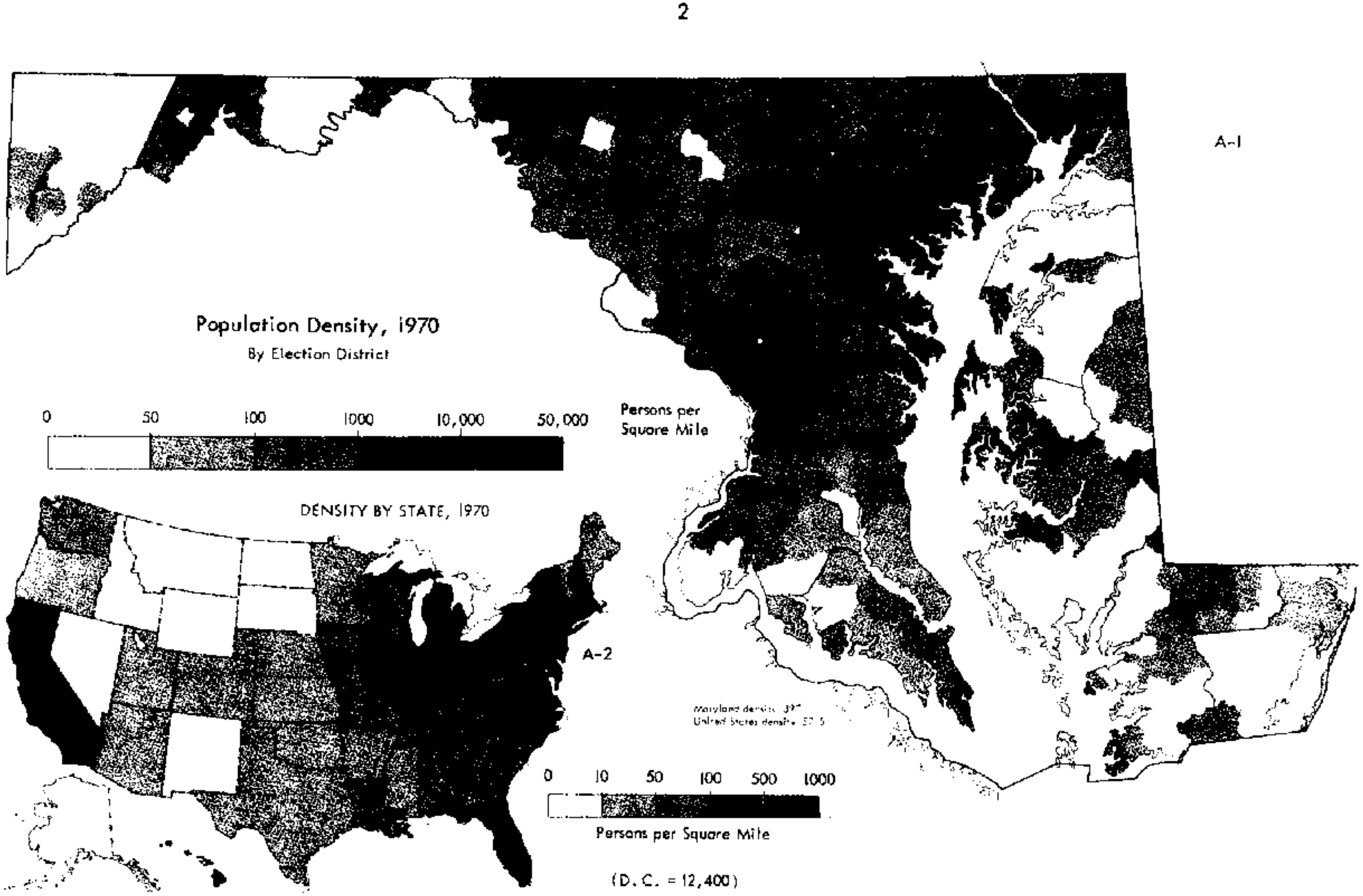


FIGURE 26. *Thematic map (choropleth) showing population density by election districts. Courtesy of Geography Department, University of Maryland.*

Recreation maps made by commercial firms and by the U.S. Forest Service and National Park Service are also widely used. Such maps show general information such as transportation and cultural features, but their primary function is to show such specific information as skiing, swimming, boating, fishing, hunting, hiking, and bicycling areas. This category also includes maps of national and state parks, monuments, and historical sites.

Atlases are standard works in general reference collections as well as in map libraries. Modern atlases include general maps as well as thematic or special purpose maps. There are a variety of general reference and research atlases. Reference atlases contain maps which show major physical features, transportation networks, political boundaries, cities and towns, and a large and comprehensive index to place names. They range in size and content from small pocket-size editions, to large, finely bound library editions, to multivolume bound or looseleaf series of folio volumes. Atlases are produced for world coverage, for geographic regions, countries, states, provinces, counties, cities, the oceans, planets, and space. They are revised periodically to reflect the changing world scene. Important examples of world reference atlases are the *Times Atlas of the World,* compiled by John Bartholomew for the Times Publishing Company, and Rand McNally and Company's *Commercial Atlas and Marketing Guide.* The latter atlas was first published in 1876 and is now in its 106th edition. It is the largest American atlas and has primary focus on the United States and lesser emphasis on other countries of the world. This atlas is intended as a reference tool for businessmen. The detailed place name and physical feature index, for each state, provides the only comprehensive and important gazetteer for the United States.

Thematic atlases show the distribution and interrelationship of the various elements of the physical, economic, and cultural geography of an area, or they deal with only one subject, such as soils or land use. They may be used for showing resource inventories, education, or in promotion of a special area.

Since publication of the first official national atlas in Finland, in 1899, interest has grown in industrial countries in the production of single country atlases. National atlases, partly stimulated by national pride, were also developed to present a synthesis of geographical knowledge of a country. To further stimulate interest in national and regional atlas publication, a United Nations Commission on National Atlases was founded at Rio de Janeiro in 1956. Most national atlases are officially produced because of the high cost of map research and compilation. Noteworthy among recent national atlases is the *National Atlas of the United States of America,* prepared in 1970 under the direction of Arch C. Gerlach, chief geographer, United States Geological Survey.

Special Cartographic Formats

Maps have been printed on a variety of materials, such as Oriental fans and colonial powder horns. They were painted on walls and modeled in three dimensions, in paper-mache, plaster, metal, and plastic. They have been woven in tapestries and embroidered and printed on fabric. Of special formats, the geographical globe is most useful for reference and study.

Terrestrial and celestial globes were known in antiquity. A marble Greek celestial globe dated 300 B.C. is preserved in the Royal Museum at Naples. Globe making shared in the great advances of mapmaking. Martin Behaim's 1492 globe marks the beginning of the modern globe era. From this time globe making became a highly developed art and science (see Figure 27). Thousands of useful and ornamental globes of all sizes have been produced. The first American globes were made in the early 19th century by a Vermont blacksmith, James Wilson.

A map constructed on a sphere shows the earth in its most correct form, and is the only representation in which the scale is correct for all parts of the earth's surface. Globes are useful for working out transportation problems, because distances are undistorted. A globe is, therefore, an excellent tool for visualizing true spatial relationships, for it is a model of the earth in space. Globes are also used

FIGURE 27. *1543 terrestrial globe within armillary spheres made in Cologne by Casper Vopell. Courtesy of Geography and Map Division, Library of Congress.*

for determining latitude and longitude, finding direction and great-circle routes, standardizing time zones, estimating and comparing areas, and determining the elevation and azimuth of the sun.

Handling Maps, Charts, and Atlases in Libraries

Because cartography is now established as a research discipline, there is increased interest in map information. The map library, large or small, serves a most important and desirable purpose in collecting, preserving, and making maps, charts, and atlases available for research. (See *Geographical Libraries and Map Collections*, vol. 9, pp. 236–266 of this encyclopedia.) The map format, bound or loose, with its long history and rich and diverse store of information, is a most valid reference source. The importance of maps in libraries is now recognized by both researchers and librarians. Maps, therefore, are now regarded as necessary as books for reference purposes. They are studied and consulted by people from many disciplines as well as by geographers and historians. In most instances, libraries do not find difficulty in handling atlases as reference book material. It is evident, however, that some general and most special atlases, individual sheet and collected set maps, and other cartographic formats present special handling problems for libraries. An orderly system of control and retrieval of this material is therefore necessary. Procedures for handling such a wide variety of shapes and sizes are necessarily different from handling book material.

ACQUISITIONS

Procurement of cartographic materials for map libraries must rest upon an established acquisitions policy which places emphasis on the special needs of the clientele served. A plan must be implemented for determining the scope of coverage and the geographical areas to be maintained and serviced. In determining such a policy it is important to work within the scope of the available and future space for housing the collections and equipment, and staff, budget, and administrative support for the acquisition program. The size of the library, therefore, is a determining factor for the future development of the map collection.

There is no comprehensive bibliography of cartographic works. It is necessary, therefore, to rely on the numerous published sources for order information. The specialist should be resourceful and persistent in building a useful and comprehensive cartographic collection. Excellent national bibliographies, published in many countries, describe their book trade, which includes significant atlases, although individually published maps are generally excluded.

Maps in libraries are usually acquired by gift, exchange, or purchase. For current cartographic acquisitions, it is necessary to work with the catalogs and price lists of commercial, institutional, and governmental publishers and with sources that are meant primarily for selection, such as reviews and lists in the geographical and cartographical serials, accession lists from map libraries, the catalogs of out-of-print dealers in maps and atlases, and special subject or area bibliographies of maps and atlases. Cartographic, geographic, and historic literature often list new maps and atlases and are important sources to consult.

Published information about maps and atlases may, therefore, be divided into five categories:

1. Geographical journals, which regularly carry lists and reviews of maps and atlases.
2. Cartographic accession lists, produced by other libraries.
3. National bibliographies containing map and atlas citations.
4. Catalogs and lists of publishers and dealers.
5. Catalogs and lists of secondhand dealers.

Acquisition specialists in some of the larger map libraries prepare useful aids for procuring maps and atlases. Noted below is the 1975 list of map, chart, and atlas sources prepared by the Geography and Map Division, Library of Congress.

1. *A List of National Bibliographies Containing References to Maps and Atlases,* 5 pp., November 1975.
2. *Publishers and Official State Maps,* 10 pp., November 1975.
3. *Selected Geographical and Cartographical Serials Containing Lists and/or Reviews of Current Maps and Atlases,* 4 pp., August 1975.
4. *Selected List of International Dealers in Out of Print Maps and Atlases,* 5 pp., July 1975.
5. *Selected List of United States Dealers in Out of Print Maps and Atlases,* 2 pp., November 1975.
6. *Selected Map and Atlas Accession Lists,* 3 pp., July 1975.
7. *Selected Sources for Maps Published by International Organizations,* 1 p., November 1975.
8. *Sources of Cartographic Acquisition in the Library of Congress,* 11 pp., December 1971.
9. *United States Official Mapping Agencies,* 2 pp., November 1975.
10. *United States Private and Commercial Map Publishers,* 2 pp., November 1975.
11. *United States Publishers and Distributors of Three Dimensional Plastic Maps and Globes,* 1 p., November 1975.

STORAGE EQUIPMENT

Maps are more easily damaged than books. Their great variation in size and their flexibility and low tear strength in relation to surface area make special handling and equipment essential for their storage and preservation.

The most common method of map storage is in metal, horizontal drawer cases. Although there is yet no agreement, many map drawers in libraries are 2 inches deep, with inside dimensions approximately 43 x 32 inches in size. Larger drawers usually waste space and if deeper than 2 inches, filing and withdrawing maps is difficult. It may be practical for a map library to have several larger cases for oversize material. It is, however, more practical, for flexibility of the collection, to standardize the size and color of the cases in the event that the collection needs to be shifted.

Horizontal map cases are made in five-drawer units and, if the floor will support the weight, units may be stacked six high. Each drawer will hold about 200 maps. A fully loaded five-drawer unit weighs 340 pounds, or 55 pounds per square foot. Six loaded map cases weigh 310 pounds per square foot. For this reason map libraries are frequently located in basement levels of the library, where they take advantage of a firm base.

Average size atlases present little storage problem, and standard double-faced, 10-inch book shelves will accommodate the majority of them, shelved either vertical or horizontal, depending on size and format. Folio atlases require oversize shelving. If large atlases are frequently used, as at reference counters, they are best protected by keeping them on special roller shelving to minimize wear.

Cartographic formats other than flat maps require special treatment. There is no standard equipment for storing rolled maps, and most map libraries employ equipment that is custom built on the premises. One popular method is to hang the maps from the ceiling, or within a tall cabinet, by an eye screw placed at one end of the map rod.

Relief models should not be stacked. The most practical storage for such maps is to place a metal grommet in the center of the short side and suspend the map from fixed hooks, wires, or horizontal rods, using S-hooks. Some libraries use large cabinets with shelving approximately four inches apart for storing models.

Globes require maximum protection because of their fragility. Standard book shelving, with shelves arranged according to the size of the globes, is useful and practical. A plastic covering for the entire shelving area will protect the globes from dust.

In addition to standard library furniture and shelving for reference books and periodicals, the map reference room should include large tables to accommodate the large maps, and space per reader should be no less than 10 square feet.

The standard, flat-shelf book truck makes a good atlas truck. A satisfactory map truck, however, should have a flat top, with one to three shelves, measuring approximately 2½ x 5 feet.

To store elephant size atlas folios and for temporary storage, sorting, and processing of maps, warehouse-type metal shelving is appropriate.

PROCESSING MAPS, CHARTS, AND ATLASES

It is as important to maintain a catalog in a map library as in a book library. A small map collection may be filed without full cataloging in a logical area–subject–date sequence. With this method, references are used to refer the user to the many areas and subjects which may be shown on some maps. A catalog provides more reliable access to the map collection. The larger the collection the greater the need for a catalog. The catalog saves time, wear and tear on the collection, and provides multiple approaches with area, subject, authority, publisher, title, and series tracings. It also provides an accurate record of the collection.

With the growth of map collections in the United States in the 20th century, many systems of cataloging were developed. Philip Lee Phillips, first chief of the Geography and Map Division, Library of Congress, published notes on a map cataloging system. His essay first appeared in Charles Cutter's *Rules for a Dictionary Catalog* (Washington, Government Printing Office, 1904). He states that "the cataloging of maps and atlases differs very little from cataloging of ordinary books." His ideas have generally been followed by the Library of Congress and the American Library Association. This philosophy is incorporated in Chapter 11 of the *Anglo-American Cataloging Rules,* which states that "A map, a series or set of maps, an atlas, a relief model, or a globe is entered under the person or corporate body that is primarily responsible for its informational content. If the content has both geographic and subject aspects, the aspect that constitutes the principal feature of the work determines the rules of entry to be applied. . . ." The cataloging of atlases varies from book cataloging practice in two respects, that of collation, and in the stating of the scale of maps. Collation reflects not only the number of pages of text, but includes how many maps there are in the atlas.

In 1930 Archibald B. Williams developed a system of cataloging maps for what is today the Defense Mapping Agency Topographic Center. This system places area first on the card, ahead of all other bibliographic data.

The late Samuel W. Boggs, geographer, and Dorothy C. Lewis, former map librarian, Department of State, developed a cataloging manual in 1932 which was subsequently published in 1945 under the title *The Classification and Cataloging of Maps and Atlases.* The "Boggs and Lewis" system "specified that designation of main entry should be left to the map user."

The American Geographical Society, which has one of the oldest map collections in the United States, published its expanded and revised rules for *Cataloging and Filing Rules for Maps and Atlases*. . . in 1969. In this system there are multiple cards for each map under area–date, subject, and author. These cards are color coded for different cartographic materials. The rules described above are the only map cataloging rules presently in print. There are many other systems in use for special collections and in college and university libraries.

It is important to note some nongeographic systems of arrangement and classification of maps and atlases which are often employed in archival collections. In these systems maps and atlases are arranged by provenance, subject, or format. Filing records by provenance is practical and economical for the archivist. In such a system maps remain as arranged by the agency that created the records. Use is made of the agency's existing registers, indexes, and other finding aids which accompany the materials. Filing by subject groups in such artificial classes as roads, railroads, geology, and soils is also employed. Another system is format arrangement, which uses size and form and assigns location symbols to indicate filing position.

Automation in map and atlas cataloging has been relatively slow in coming to the aid of the map librarian. In most map libraries there has been little available time or funds for adapting computerized cataloging techniques. Several automated systems are now in operation. Increasingly, map librarians throughout the country have looked to the Library of Congress for leadership in developing an automated cataloging system that would be capable of supplying bibliographic descriptions of currently available maps and atlases. Such an automation system, now in full operation, was developed in 1968 by the Geography and Map Division, Library of Congress, in cooperation with the library's Information Systems Office and MARC Development Office. A program was developed by adapting Anglo-American cataloging rules to computerized procedures for cataloging maps. The resulting system, MARC Map, is a modification of the Library of Congress's successful Machine-Readable Cataloging project (MARC) procedures for cataloging English-language monographs. These procedures extend to include multisheet set and series maps, which are given open-entry descriptions. Coverage for individual set maps, however, is still indicated on appropriate graphic indexes. In May 1973, the library's Card Division inaugurated a monthly subscription service for MARC Map tapes and printed catalog cards.

The MARC Map system is a document-retrieval rather than an information-retrieval system. It provides access to individual maps, from which the user personally extracts the desired information. There are systems with higher levels of sophistication which permit retrieval of specific information from pertinent maps and atlases. Such systems, however, require much greater financial support and are not in general use outside the federal government.

PRESERVATION

All map libraries, large or small, must have a program for preservation and restoration. Maps, charts, and atlases in their multiplicity of sizes and formats present special conservation problems. The map library must recognize the problems of paper deterioration due to ink and paper chemistry, insects, rodents, mold, and fungi. It must guard against damage due to wear and careless handling and poor storage. It is essential to determine, within budgetary means, the priorities for a well-managed conservation program. Consideration must be given to permanent and temporary preservation, for binding atlases, and mounting, laminating, and plastic encapsulation of maps.

Conservation may be performed by specialists or nonspecialists. Specialists are concerned primarily with techniques of deacidification for map and atlas treatment, paper and cloth mounting, laminating, and the development of new techniques. One important and interesting new development is the process of "leaf casting" for restoration of rare documents. This process actually restores paper missing in deteriorated maps and atlases. Nonspecialists may edge maps with tape, encase them in polyester film, insert maps in acid-free paper folders, and do temporary mending with transparent tape.

Preservation by photoreproduction is important especially for heavily used collections. Photoreproduction provides for the retirement of the original material from constant use and wear. Photocopying maps and atlases requires an expert photographer who is aware of the nature, size, and format of maps and the vital information that appears on them. This information must be faithfully reproduced if it is to be of value.

REFERENCE SERVICE

The most important function of a map library is the use of its collections. Without use the library is merely a storehouse of maps and atlases. Because of the special nature of the map library, and because many map libraries are not adequately cataloged, it is usually not possible to utilize fully the map research facilities without contacting the reference librarian. The librarian is, in effect, an essential intermediary between the user and the store of information in the collections. It is, therefore, the responsibility of the librarian to ascertain the needs of the patron and to select appropriate materials, and interpret them if necessary. The reference interview is the most useful technique to encourage the user to express his request, and to analyze it and apply it to the map library's organization and finding aids. As the essential link with patrons, the reference librarian must be thoroughly familiar with the collections, the reference books, the reading and interpretation of maps, geography or related fields, and library science.

A reader's request for service may be handled by one of the following procedures:

1. Direction to the card catalog
2. Direction to reference works and finding aids
3. Supplying facts
4. Supplying maps, charts, or atlases
5. Direction to map and book reference collections
6. Assistance in understanding material supplied
7. Referral to other source or library

Every map library must maintain various reference aids, which should include the following:

1. Card catalog
2. Book collection
3. Serial collection
4. Selected atlases
5. Map indexes
6. Clipping file
7. Pamphlet file
8. Publishers' catalogs and lists

Loan policies vary in libraries. The majority have restrictions on lending retrospective materials. Some of the determining factors which govern the loan policy are the size and fragility of the material. In general, the map library whose holdings are current will more readily lend maps and atlases, while the library whose collections are old will not lend materials, except under special conditions.

Photocopy service is available in many map libraries. Usually the larger the library collection, the more types of reproductions are provided. Larger map library copy service includes the following:

1. Quick research copy (electrostatic positive print).
2. Photostat (this process is most economical and useful for larger maps).
3. Photograph (usually used for publication).
4. Microfilm.
5. Color transparency (most often used for projection or for color publication).

An important part of reference service is making the collections known to potential users. The basic approach to advertising the collections are the following:

1. Information brochure
2. Map exhibits
3. Oral and slide presentation
4. Articles about the collections
5. Bibliographies and lists of special segments of the collections

BIBLIOGRAPHY

Alexander, Gerald L., *Guide to Atlases: World, Regional, National, Thematic: An International Listing of Atlases Published Since 1950,* Scarecrow, Metuchen, N.J., 1971, 671 pp.

Alonso, Patricia, "Conservation and Circulation in Map Libraries: A Brief Review," *Special Lib. Assoc., Geog. Map Div. Bull.,* **74,** 15–18 (December 1968).

Alonso, Patricia, "Feasibility Study on Computer-Produced Map Catalogue," *Australian Lib. J.,* 245–252 (July 1972).

American Geographical Society, *Cataloging and Filing Rules for Maps and Atlases in the Society's Collection,* rev. and exp. ed., by Roman Drazniowsky, American Geographical Soc., New York, 1969, 92 pp. (mimeographed and offset Publication No. 4).

Anderson, O. C., "No Best Method to Catalog Maps," *Lib. J.,* **75**(6), 450–452 (1950).

Anglo-American Cataloging Rules, American Library Assoc., Chicago, 1967. See particularly "Maps, atlases, etc.," pp. 272–281.

Aziz, Barbara N., "Tibetan Manuscript Maps of Dingri Valley," *Can. Cartographer,* **12**(1), 28–38 (June 1975).

Bagrow, Leo, *History of Cartography,* rev. and enl. by R. A. Skelton, Harvard Univ. Press, Cambridge, Mass., 1964, 312 pp.

Bahn, Catherine I., "Map Libraries—Space and Equipment," *Special Lib. Assoc., Geog. Map Div. Bull.,* **46,** 3–15 (1961).

Barrow, William J., "Deacidification and Lamination of Deteriorated Documents, 1938–1963," *Amer. Archivist,* **28,** 285–290 (April 1965).

Boggs, Samuel W., and Dorothy C. Lewis, *The Classification and Cataloging of Maps and Atlases,* Special Libraries Assoc., New York, 1945, 175 pp.

Bricker, Charles, *Landmarks of Mapmaking: An Illustrated Survey of Maps and Mapmakers,* maps chosen and displayed by R. V. Tooley, text written by Charles Bricker, preface by Gerald Roe Crone, Elsevier, Amsterdam, 1968, 276 pp.

Brown, Lloyd A., *Map Making: The Art That Became a Science,* Little, Brown & Co., Boston, 1960, 217 pp.

Brown, Lloyd A., *Notes on the Care and Cataloging of Old Maps*, Hawthorn House, Windham, Conn., 1941, 110 pp.

Brown, Lloyd A., "The Problem of Maps," *Lib. Trends*, **13**(2), 215–225 (1964).

Brown, Lloyd A., *The Story of Maps*, Little, Brown & Co., Boston, 1949, 397 pp.

Carrington, David K., and Elizabeth U. Mangan, *Data Preparation Manual for the Conversion of Map Cataloging Records to Machine-Readable Form*, Library of Congress, Washington, D.C., 1971, 317 pp.

Collier, J. E., "Storing Map Collections," *Professional Geographer*, **12**(4), 31–33 (1960).

Crone, Gerald R., *Maps and Their Makers: An Introduction to the History of Cartography*, 4th rev. ed., Hutchinson Univ., London, 1968, 184 pp.

Cunha, George Martin, and Dorothy Grant Cunha, *Conservation of Library Materials: A Manual and Bibliography on the Care, Repair and Restoration of Library Materials*, 2nd ed., 2 vols., Scarecrow, Metuchen, N.J., 1971–1972.

Dilke, O. A. W., and Margaret Dilke, "The Eternal City Surveyed," *Geographical Mag.*, **74**(12), 745–750 (September 1975).

Drazniowsky, Roman, *Map Librarianship: Readings*, Scarecrow, Metuchen, N.J., 1975, 548 pp.

Drexel Library Quarterly, "Map Librarianship," **9**(4), entire issue (October 1973).

Easton, William W., "Repair and Preservation of Map Materials," *Special Lib.*, **61**(4), 199–200 (1970).

Ehrenberg, Ralph, "Map Acquisition, Arrangement and Description at the National Archives," *Special Lib. Assoc., Geog. Map Div. Bull.*, **68**, 10–13 (June 1967).

Ehrenberg, Ralph, "Reproducing Maps in Libraries and Archives: The Custodian's Point-of-View., *Special Lib.*, **64**(1), 18, 20–24 (1973).

Fink, Mary Ellen, "A Comparison of Map Cataloging Systems," *Special Lib. Assoc., Geog. Map Div. Bull.*, **50**, 6–12 (December 1962).

Fite, Emerson D., and Archibald Freeman, *A Book of Old Maps, Delineating American History from the Earliest Days Down to the Close of the Revolutionary War*, Harvard Univ. Press, Cambridge, Mass., 1922.

Foncin, Myriem, "Some Observations on the Organization of a Large Map Library," *World Cartography*, **3**, 33–40 (1953).

Fuechsel, Charles F., "Maps and Mapping," *Encyclopaedia Britannica*, 15th ed., 1974, pp. 470–484.

Galneder, Mary, "Equipment for Map Libraries," *Special Lib.*, **61**, 271–274 (July–August 1970).

Galneder, Mary, and Alberta Koerner, "Maps and Map Collections," *Nonprint Media in Academic Libraries* (Pearce Grove, ed.), American Library Assoc., Chicago, 1975, pp. 148–170.

Gould, P. R., *On Mental Maps*, Michigan Inter-University Community of Mathematical Geographers, 1966, 53 pp. (*Discussion Papers* No. 9).

Greenhood, David, *Mapping*, Univ. Chicago Press, Chicago, 1964, xiii, 289 pp. (Phoenix Science Series).

Gritzner, Charles F., "Sources of Map Information," *J. Geography*, **69**(3), 141–146 (1970).

Hagen, C. B., "An Information Retrieval System for Maps," *UNESCO Lib. Bull.*, **20**(1), 30–35 (1966).

Hagen, C. B., "A Survey of the Usage of a Large Map Library," *Special Lib. Assoc., Geog. Map Div. Bull.*, **80**, 27–31 (1970).

Hill, James Douglas, "Map and Atlas Cases," *Lib. Trends*, **13**, 481–487 (April 1965).

Imhof, Eduard, *Thematische Kartographie*, Walter de Gruyter, Berlin, 1965, 360 pp.

Institute für Landeskunde, *Bibliotheca Cartographica; Bibliography of Cartographic Literature*, Institut für Landeskunde [and] Deutsche Gesellschaft für Kartographie (2 Nos. a year).

International Geographical Union, *Bibliographie cartographique internationale*, Comite Nationale Française de Geographie, 1936–.

International Geographical Union, Commission on the Classification of Geographical Books and Maps in Libraries, *Final Report on the Classification of Geographical Books and Maps, XIth General Assembly and XXth International Geographical Congress, London, July–August 1964*, 140 pp., Appendix.

Kaiser, Frances E., ed., *Handling Special Materials in Libraries*, Special Lib. Assoc., New York, 1974, pp. 69–90.

Koeman, C., compl. and ed., *Atlantes Neerlandici*, Theatrum Orbis Terrarum, Amsterdam, 1967–1971, 5 vols.

Koeman, C., "The Principle of Communication in Cartography," *Intern. Jahrbuch Kartographie*, **11**, 169–176 (1971).

Koerner, Alberta G., "Acquisition Philosophy and Cataloging Priorities for University Map Libraries," *Special Lib.*, **63**(11), 511–516 (1972).

Koerner, Alberta G., "Map Collections in Ann Arbor," *Special Lib. Assoc., Geog. Map Div. Bull.*, **79**, 31–34 (1970).

La Hood, Charles G., Jr., "Reproducing Maps in Libraries: The Photographer's Point-of-View," *Special Lib.*, **64**(1), 19, 25–28 (1973).

Layng, T. E., "Care and Preservation of Maps," *Proceedings* of the First National Conference on Canadian Map Libraries, Ottawa, 1967, pp. 35–41.

Lee, Paul B., "Map Filing Equipment," *Special Libraries: How to Plan and Equip Them*, Special Libraries Assoc., New York, 1963, pp. 43–45 (Special Libraries Association, Monograph No. 2).

Leszczycki, S., "Some Remarks about National Atlases," *Przeglad geograficzny*, **32**(1), 3–19 (1960).

Lock, C. B. Muriel, *Modern Maps and Atlases*, Archon Books, Hamden, Conn., 1969, 619 pp.

McGregor, D. R., "Geographical Globes," *Cartographic J.*, **3**(1), 7–9 (1966).

McLaughlin, Pat, "Federal Map Libraries and the Development of Automation Standards," *Special Lib. Assoc., Geog. Map Div. Bull.*, **86**, 21–23 (1971).

Marsh, Susan, "Maps, the Oldest Visual Aid and Primary Source Material," *J. Geography*, **66**(3), 130–132 (1967).

Mitra, D. K., "Maps in Libraries, Their Storage and Preservation," *Herald Lib. Science*, **7**(1), 27–32 (1968).

Modelski, Andrew M., *Railroad Maps of the United States*, Library of Congress, Washington, D.C., 1975, 112 pp.

Mullins, Lynn, "The Rise of Map Libraries in America," *Special Lib. Assoc., Geog. Map Div. Bull.*, **63**, 2–11 (March 1966).

Murphy, Mary, "Will Automation Work for Maps?" *Special Lib.*, **54**(9), 563–567 (1963).

Nordenskiöld, Adolf Erik, *Periplus: An Essay on the Early History of Charts and Sailing Directions*, Norstedt & Son, Stockholm, 1897, 208 pp.

Overstreet, William B., "The National Cartographic Information Center," *Special Lib. Assoc., Geog. Map Div. Bull.*, **86**, 9–10 (1971).

Phillips, Brian, "Simon Fraser University Computer Produced Map Catalogue," *J. Lib. Automation*, **2**(3), 105–115 (1969).

Raisz, Erwin J., *General Cartography*, 2nd ed., McGraw-Hill, New York, 1948, 354 pp.

Ristow, Walter W., "Cartographic Information Services of the Library of Congress," *Amer. Cartographer*, **1**(2), 125–130 (1974).

Ristow, Walter W., "The Emergence of Maps in Libraries," *Special Lib.*, **58**(6), (July–August 1967).

Ristow, Walter W., *Guide to the History of Cartography*, Library of Congress, Washington, D.C., 1973, 96 pp.

Ristow, Walter W., "A Half-Century of Oil-Company Road Maps," *Surveying and Mapping*, **24**(4), 617–637 (1964).

Ristow, Walter W., "Map Librarianship," *Lib. J.*, **92**, 3610–3614 (October 1967).

Ristow, Walter W., and David K. Carrington, "Machine-Readable Map Cataloging in the Library of Congress," *Special Lib.*, **62**, 343–352 (September 1971).

Robinson, Arthur H., *Elements of Cartography*, 3rd ed., Wiley, New York, 1969, 415 pp.

Royal Geographical Society, "Storage and Conservation of Maps" (Bibliography), *Geographical J.*, **121**(2), 182–189 (1955).

Rugg, Dean S., "Developing the University Map Library," *J. Geography*, **66**, 119–128 (March 1967).

Skelton, R. A., *Maps—A Historical Survey of Their Study and Collecting*, Univ. Chicago Press, Chicago, 1972, xvii, 138 pp. (The Kenneth Nebenzahl, Jr., Lectures in the History of Cartography at Newberry Library.)

Special Libraries Association, Geography and Map Division, "Bibliographies on Map and Mapping," *Special Lib. Assoc., Geog. Map Div. Bull.*, **51**, 19–21 (1963).

Special Libraries Association, Geography and Map Division, Committee on Automation, "Map Libraries and Automation: A Bibliography," *Special Lib. Assoc., Geog. Map Div. Bull.*, **66**, 14–18 (December 1966); **67**, 14–19 (March 1967).

Special Libraries Association, Geography and Map Division, Directory Revision Committee, *Map Collections in the United States and Canada, A Directory*, 2nd ed. (David K. Carrington, Chairman), Special Libraries Assoc., New York, 1970, 176 pp. (See also 1954 edition, 352 pp.)

Stallings, David L., "Automated Map Reference Retrieval," M.A. thesis, University of Washington, Seattle, 1966, 71 pp.

Stephenson, Edward L., *Terrestrial and Celestial Globes: Their History and Construction Including a Consideration of Their Value As Aides in the Study of Geography and Astronomy*, 2 vols., Published for the Hispanic Society of America by the Yale University Press, New Haven, Connecticut, 1921.

Stephenson, Richard W., "Atlases of the Western Hemisphere: A Summary Survey," *Geographical Rev.*, **62**(1), 92–119 (1972).

Stephenson, Richard W., "Map Librarianship," Course L.S. 771, unpublished lectures, July 1975, Catholic University of America, Graduate Department of Library Science.

Stephenson, Richard W., and Mary Galneder, "Anglo-American State and Provincial Thematic Atlases: A Survey and Bibliography," *Can. Cartographer,* **6**(1), 15–45 (1969).

Struck, Robert L., "Making a Map with Digital Data," presented to the American Society of Photogrametry and the American Congress on Surveying and Mapping, Fall Convention, Phoenix, Arizona, October 1975, 15 pp.

Taylor, E. G. R., *The Haven-Finding Art: A History of Navigation from Odysseus to Captain Cook,* Adelard-Schuman, New York, 1957.

Thatcher, E. P., "The Map Library of the University of Oregon," *Special Lib. Assoc., Geog. Map Div. Bull.,* **43,** 20–21 (1961).

Thrower, Norman J. W., *Maps and Man: An Examination of Cartography in Relation to Culture and Civilization,* Prentice-Hall, Englewood Cliffs, N.J., 1972, 184 pp.

Tooley, Ronald Vere, *Maps and Map-Makers,* 4th ed., Crown, New York, 1960, xii, 140 pp.

Tyner, Judith, *The World of Maps and Mapping,* McGraw-Hill, New York, 1973, 49 pp.

U.S. Library of Congress, Geography and Map Division, *The Bibliography of Cartography,* G. K. Hall, Boston, 1973.

U.S. Library of Congress, Information Systems Office, *Maps: A MARC Format; Specifications for Magnetic Tapes Containing Catalog Records for Maps,* Washington, D.C., 1970, 45 pp.

U.S. Library of Congress, Map Division, *Maps: Their Care, Repair and Preservation in Libraries,* rev. ed. by Clara Egli LeGear, Washington, D.C., 1956, 75 pp.

U.S. Library of Congress, Subject Cataloging Division, *Classification, Class G: Geography, Anthropology, Folklore, Manners and Customs, Recreation,* 3rd ed., Government Printing Office, Washington, D.C., 1954, 502 pp. (Additions and changes to January 1966, 77 pp.)

Wallis, Helen, "Missionary Cartographers to China," *Geographical Mag.,* **74**(12), 751–759 (September 1975).

Warren, K. F., "Introduction to the Map Resources of the British Museum," *Professional Geographer,* **17**(6), 1–7 (1965).

Wiedel, Joseph W., and Derek Thompson, *An Economic and Social Atlas of Maryland,* Univ. Maryland, College Park, 1974, 126 pp.

Winch, Kenneth, ed., *International Maps and Atlases in Print,* Bowker, New York, 1974, 864 pp.

Winearls, J., "Map Libraries in Canada," *Cartographer,* **3**(2), 161–165 (1966).

Wise, Donald A., "Cartographic Sources and Procurement Problems," unpublished paper to be presented at Special Libraries Association Convention, Denver, June 1976, 9 pp.

Wise, Donald A., "Sources of Cartographic Acquisition in the Library of Congress," *Special Lib. Assoc., Geog. Map Div. Bull.,* **86,** 11–15 (1971).

Wolter, John A., "The Emerging Discipline of Cartography," Thesis submitted to the faculty of the Graduate School of the University of Minnesota, July 1975.

Wolter, John A., "Source Materials for the History of American Cartography," *Amer. Studies,* **12**(3), 12–27 (1974).

Woods, Bill M., "Map Cataloging: Inventory and Prospect," *Lib. Resources Tech. Services,* **3,** 257–273 (Fall 1959).

Woods, Bill M., *Map Librarianship: A Select Bibliography,* 3rd ed., New Jersey Library Assoc., Newark, New Jersey, 1971, 20 pp.

Yonge, Ena L., "Map Department of the American Geographical Society," *Professional Geographer,* **7**(2), 2–5 (1955).

Yonge, Ena L., "World and Thematical Atlases," *Geographical Rev.,* **52**(4), 585–596 (1962).

Andrew M. Modelski

NORDDOK – NORDIC COMMITTEE FOR INFORMATION AND DOCUMENTATION

NORDFORSK – SCANDINAVIAN COUNCIL FOR APPLIED RESEARCH

See *Norway, Libraries and Information Centers in: Information Centers (Inter-Nordic Organizations)*

NORTH CAROLINA LIBRARY ASSOCIATION

In May 1904 seven people met in Greensboro to organize the North Carolina Library Association (NCLA). Their concern was the status of libraries in the state and how an association could aid in their development. The first annual meeting was held that same year in Charlotte with 49 members present.

The early organization was blessed with strong leadership and the first 5 years saw significant accomplishments. By 1909 the membership had grown to 100, had hosted an enthusiastic meeting of the American Library Association (ALA), and had caused the North Carolina Library Commission, established and supported by the legislature, to come into being. According to the *Constitution* of the association, its object is "to promote libraries and library service in North Carolina."

The four classes of membership include: individual—any person who is or has been connected with any library, or any member of a library's governing board, or any student of library science; institutional—any library in the state with dues based upon the annual operating budget; contributing—any individual, association, firm, or organization interested in the work of the association; and honorary—persons who have made unusual contributions to library services, as nominated by the Honorary Membership Committee and elected by the Executive Board. Honorary members pay no dues.

The last annual meeting of the association was held in 1921. The first biennial one took place in 1923. The 2,000-member organization continues to meet every other year.

Officers of the association include a president, a first vice-president (who is president-elect), a second vice-president, a secretary, a treasurer, and two directors. They are elected by ballot and serve for 2 years.

The Executive Board of the organization is the governing body. It is composed of the officers of the association, the past president, the chairman of each section, and the representative to the ALA Council. The North Carolina representative to the Southeastern Library Association and the editor of *North Carolina Libraries* serve as ex-officio and nonvoting members. The president is chairman of the Executive Board, which meets quarterly.

The board considers plans for the association, transacts business within the limits of a budget system, and generally oversees the work of sections and committees. It approves all encumbrances and expenditures of funds, plans for the Biennial Conferences, and acts for the association whenever necessary.

Dues are collected on a biennial basis. The association allots a part of the dues to the sections as they are chosen by members when dues are paid. Individuals may join other sections by paying a small additional fee.

The affairs of the NCLA are administered through a headquarters office located in the town where the treasurer resides. A part-time secretary handles the business of the office. Responsible to the Executive Board, the executive secretary provides services to the membership, conducts necessary business with individuals and organizations, and maintains the office.

The North Carolina Library Association is a chapter of the American Library Association and regularly sends a representative to ALA Council meetings. The NCLA representative is elected by ALA members living in North Carolina. The association is a contributing member of the Southeastern Library Association and has a representative on that organization's Executive Board.

Other affiliations include the North Carolina Legislative Council, Public Library Certification Commission, the State Council for Social Legislation, and the State Library Committee.

The membership of the association divides itself into sections, each representing a type of library or field of activity clearly distinct from that of other sections. These include:

College and University Section—to give college and university librarians the opportunity to meet together and discuss general problems and provide closer liaison among small and academic libraries.

Junior College Section—to provide the opportunity for librarians of junior colleges, technical institutes, and community colleges to meet to exchange ideas and discuss their common problems.

Public Libraries Section—to unite association members interested in public libraries, to provide an opportunity for discussion and activity, and to plan and work toward the improvement of public libraries in North Carolina.

Resources and Technical Services Section—to unite association members interested in acquisitions, identification, cataloging, classification, and preservation of library materials in all types of libraries.

Association of School Librarians—to unite members interested in school libraries; to provide an opportunity for discussion of problems, ideas, and practices pertaining to the group; and to initiate and encourage studies, projects, and other activities.

Association of Library Trustees—to provide an opportunity for discussion and activity by public library trustees and others interested in libraries.

Children's Services Section—to draw together members interested in children's work and to provide an opportunity for discussions, planning, and activities.

The *Junior Members Round Table* is a group of active young librarians (under 35 years of age or in the profession less than 5 years) organized to orient themselves in the profession and its organizations and to promote a greater feeling of responsibility for the development of library service and librarianship.

In addition to section activities, much association work is carried on by committees. Standing committees are regular ones appointed for the biennium for the performance of regular duties assigned to them. In 1974 these included:

Archives—to receive, sort, and prepare for preservation all official minutes, publications, correspondence, photographs, and other memorabilia of the association, its sections, and round tables.

Audio-Visual—to encourage cooperative use of audiovisual materials among college, university, school, and public libraries and to work with the Department of Cultural Resources in recommending the purchase of materials.

Constitution and Codes—to study the *Constitution* and *By-laws* and suggest revisions for clarifying and keeping these documents up to date.

Development—to study and recommend plans, projects, and activities for meeting objectives and promoting services of the association.

Education for Librarianship—to study educational needs of librarians, to examine courses offered by training agencies, to recommend changes in curricula, and to promote special institutes and workshops to meet the needs.

Governmental Relations—to keep the association membership informed of all pending legislation affecting libraries; to keep in touch with legislators, acquainting them with needs; and to promote good relations between government at all levels and libraries of all types.

Grievance—to be responsible for mediation, arbitration, and inquiry relating to tenure, status, fair employment practices, due process, ethical practices, and the principles of intellectual freedom as set forth in policies adopted by the Council of the American Library Association.

Honorary Membership—to recommend to the Executive Board names of persons deemed worthy to receive this honor, to execute the certificates, and prepare the citations for presentation.

Intellectual Freedom—to be alert to any evidence that censorship or abridgment of the freedom to read is advocated or practiced in the state, to ascertain full facts regarding such threats and report them to the Executive Board.

Library Resources—to explore and recommend cooperative acquisition, preservation, and information on location, restrictions, and use of library materials and resources in North Carolina.

Membership—to promote individual and institutional memberships in the association.

Nominating—to select and obtain consent of two candidates for each office, prepare the ballots, and follow through—including counting votes and reporting to the president.

Scholarship—to receive applications and recommend to the Executive Board recipients for scholarships and loans.

Public Relations—to plan and promote library development on the state and local level.

The *Federal Relations Coordinator* acts to keep informed of federal legislative activity concerning libraries, to keep the membership informed, to respond to requests from the ALA Washington office, and to keep the ALA informed of activities in North Carolina.

North Carolina Libraries, published four times a year, is the official publication of the North Carolina Library Association. With the approval of the Executive Board, the president appoints the editor, who selects the Editorial Board. The journal is included in association membership, and nonmembers may subscribe on a yearly basis or purchase single issues.

Periodically the association sponsors special workshops and projects. In 1973 the Junior Members Round Table organized a "Career Awareness" slide presentation. The Public Library Section produced a 16-mm film, "Make Way for Children." Both are available from the State Library.

During the same year, the Intellectual Freedom Committee conducted a workshop on censorship. As a result, the membership of the association in a regular session adopted the following resolution.

Intellectual Freedom Resolution

Resolved:

As concerned citizens in a democratic society and as librarians of the North Carolina Library Association, we express our concern to the growing problem of censorship. We reaffirm our support of intellectual freedom consistent with the official position of the American Library Association.

To combat and answer fully the unofficial censor, we urge that all libraries adopt a written book selection policy that clearly sets forth lines of authority for acquisition and disposal of library resources.

To oppose public censorship, whether by legislative act or local ordinance, we make common cause with those national and local organizations whose fundamental opposition to censorship is consistent with our own. To implement this resolve we charge the Intellectual Freedom Committee to keep membership of the association informed of current and pending issues of censorship throughout the state. To the extent that all available resources permit, the association shall lend specific aid in local situations.

Annually two scholarships are available from the NCLA to help worthy students attend library school. These include the North Carolina Library Association Scholarship for $1,000 and the Query-Long Scholarship for $500. In addition there is the Joyce C. McLendon Student Loan Fund, which is available to students who wish to borrow a small amount of money.

One of the most significant awards which the association bestows is an Honorary Membership. It is presented to both professional and lay persons who have rendered important service to library interests in the state. Occasional awards are made to library trustees who have made outstanding contributions.

The Biennial Conference of the North Carolina Library Association meets in late October of odd-numbered years, alternating with the Southeastern Library Association which meets in even-numbered years. The president, with the Executive Board, is responsible for all aspects of the conference. The first vice-president serves as program chairman. Nationally known speakers are heard and many activities abound. The conference is always well attended, which is a manifestation of the spirit of its members—dynamic, viable, and alive.

ELIZABETH H. COPELAND

NORTH CAROLINA. UNIVERSITY OF NORTH CAROLINA LIBRARY

The Early Years of the University

The constitution of North Carolina, adopted in 1776, provided for a school system and a state university. The university was chartered in 1789, located in Chapel Hill in 1792, and opened its doors to students on January 15, 1795, becoming the first state university in the nation. The charter itself provided for a university library, but the institution had received its first book, distributed by the Congress to all colleges and universities, in 1792, almost a year before the cornerstone of the first building was laid.

Support for the library in the early years came principally from a fee charged to students for that purpose, although it is apparent that gifts from faculty and friends played a large role in the library's early development. As in most American colleges of the day, the meager resources of the library were supplemented by the collections of literary societies. Two societies, the Dialectic and the Philanthropic, were founded in the first year of the university's existence and together held a collection virtually equal in size to the university library by the early years of the new century. The perilous state of the library prompted the Board of Trustees in 1824 to send President Joseph Caldwell to Europe on a buying trip for both books and scientific equipment. President Caldwell returned a year later, having spent $3,235 for 979 volumes, of which the majority were Greek and Latin classics and early editions of original treatises on natural philosophy and astronomy. In addition, he received a number of gifts, including 54 volumes from the British and Foreign Bible Society.

The 19th Century

The trustees, whose interest in the library had been unmistakable through the mid-1820s, were guilty of equally marked neglect during the 25 years following President Caldwell's return. No doubt the series of economic crises which unsettled the nation during these years, the method of instruction, and the students' heavy reliance on the literary societies' libraries combined to encourage them in this attitude. Moreover, the demands placed on the library could scarcely have filled them with a sense of urgency. The library, located first in the president's home and later in the administration building, was open very few hours each week; and for the most part, its patrons were members of the faculty, who depended primarily upon their own private collections. A faculty member selected by his colleagues for a 6-month tour of duty performed the librarian's rather light duties until 1838, when a revised university code required that the senior tutor be designated librarian. Under this arrangement, the following were the librarians up to the Civil War: W. H. Owen, 1836–1843; Ashbel Brown, 1844–1856; and F. M. Hubbard, 1857–1866. The university's neglect of the library during this period is best seen in the trustees' failure to appropriate any funds for its growth. In 1836, Professor Owen reported that there were 1,900 volumes in the collection, which stayed fairly stable in size until the middle of the century. Even donations began to decline and eventually ceased altogether.

The 1850s witnessed a brief revival of interest in the library. A new building, Smith Hall, was constructed in 1851 to house it. The largest infusion of new material into the collection since President Caldwell's trip of 1824 came in 1858, when the university purchased the private collection of Dr. Elisha Mitchell, the faculty's foremost scientist. However, the promise of continuing development held out by these two events was soon obliterated by the Civil War and its aftermath.

The university, whose enrollment of 461 students was surpassed only by Yale before the war, continued operations during the conflict, despite a period of occupation of the campus by federal troops. Its condition after the war, however, was serious. The endowment had been erased, and the Board of Trustees, now a gathering of political appointees, dismissed the president and the faculty in 1868. Although new appointments were made almost immediately, the university was without any reliable resources and finally had to close its doors in 1871. They did not open again until September 1875, and in the intervening 4 years the buildings and properties deteriorated badly. This wastage included large thefts from the library's collection. Nevertheless, when the university reopened, the library contained approximately 8,400 volumes; and each of the two literary society libraries, roughly 7,000 volumes.

The library continued to languish until 1886, when the society libraries and the university's collection were merged. Although the title to the books was not transferred, the physical combination of the collections provided the institution with a respectable library. At much the same time, the university began to make periodic allocations of funds for the library, and the two literary societies contributed $500 annually for the maintenance of the collections. Steady if undramatic growth in the library now became possible, and the university recognized this growth in 1894 by appointing the first full-time librarian, Benjamin Wyche. In the period from 1885 to 1894, the library had been supervised by a series of professor–librarians—George T. Winston, James Lee Love, Eben Alexander, and E. A. Alderman. Wyche was succeeded as full-time librarian by R. H. Graves and, later, by E. K. Graham. Of these seven, three—Winston, Alderman, and Graham—eventually became presidents of the university.

The Librarianship of Louis Round Wilson

W. S. Bernard became librarian in 1900 and immediately began the process of reclassifying the collection from a fixed-shelf position to the Dewey Decimal Classification. He was succeeded the following year by a young man who had spent 3 years at Haverford College and whose health had compelled him to return to his native North Carolina to take his degree in 1899. Louis Round Wilson had worked as a student assistant in the Haverford library and became fascinated with the work. After his graduation and 2 years of teaching elsewhere, he returned to Chapel Hill as librarian and immediately began to introduce changes. In the 30 years of his active career at the university, he left an indelible mark upon the institution and, among his many other activities, led the library to mature growth.

When Wilson became librarian, the Columbia University library had a collection of 245,000 volumes, and the Yale University library held 250,000 volumes. It was the beginning of the age of building the great research libraries of the United States, one of the remarkable achievements by American librarianship in this century. The University of North Carolina library contained 38,593 volumes; and that Wilson brought the library into the national movement toward increased research resources is attested to not only by the 236,132 volumes in the collection when he resigned in 1931, but also by the specifically research nature of several of the collections he developed. This type of growth was appropriate only for a university which began—as he took up his new duties—to offer the doctorate in three disciplines: chemistry, botany, and English. Wilson himself was an early candidate for the degree in English and in 1906 published his dissertation in the first number of *Studies in Philology*, published at the university.

The growth of the collection prompted Wilson to turn his attention immediately to the question of a new building. The old library, occupied first in 1853, was now clearly inadequate. He applied for assistance under the library construction program of Andrew Carnegie, and in 1906 the university was granted $55,000 on a matching basis. This award was a double victory for Wilson, for it brought not only the needed building, which was completed and occupied in 1907, but a number of endowments that substantially increased the library's ability to grow. One of the most significant results was a gift of $5,000 from John Sprunt Hill to endow a collection of North Caroliniana. Building on materials collected over the previous 60 years, the endowment allowed the establishment of the library's first special collection, the North Carolina Collection, when the new building was occupied.

Wilson quickly consolidated the library's position within the university. For the first time, he brought the total administration of the library, including a separate budget, under the librarian's control and began to involve the instructional departments in the selection of library books. He was among the first librarians in the country to encourage young women to enter librarianship and soon had an adequate staff of able young librarians. He obtained title to the collections of the two literary societies, and since that time the library has been known as "the Library of the University of North Carolina endowed by the Dialectic and Philanthropic Societies." He completed the reclassification of the collection and initiated night service for the university community. Long interested in extending the resources of the university library to the people of the state, he now inaugurated off-campus service to teachers, women's clubs, and other groups. This service was formally recognized by the university in 1913, when a Bureau of Extension was established and housed in the library, with Wilson as director. He also began teaching courses in library administration and thus set in train the events which would lead to the establishment of an accredited library school at the university in 1931. Between 1901, when he became librarian, and 1914, the collection grew from 38,593 to 72,295, and the total annual expenditures from $2,600 to $10,790.

This steady growth continued during World War I, and in 1918–19, Wilson was able to report that the collection had grown by 16,000 volumes during the war years, and the library's income had reached roughly $27,000 a year. Perhaps the most significant addition to the collection during those years was the Stephen B. Weeks Collection of North Caroliniana in 1918. Consisting of some 10,000 volumes assembled over 35 years, the Weeks Collection significantly enriched the North Carolina Collection, particularly with its material on the colonial period. The early books, pamphlets, newspapers, journals, and maps that made up this segment of the collection covered the history of many of the surrounding states and thus formed the basis for research on the entire Southeast region.

When the war ended, it was clear that the Carnegie Building was no longer adequate, and Wilson began immediately to campaign for a replacement. He first won the support of the university administration and in 1927, with them, approached the state legislature, requesting an appropriation of $875,000 for the new structure. The figure finally approved was $625,000, but Wilson, having traveled from New England to Minnesota to examine new academic libraries, was in a position to put the reduced amount to maximum use. The new building could accommodate 400,000 volumes, provided adequate readers' space, and contained special provisions for the North Carolina Collection and the Library Extension Department. It was dedicated on October 19, 1929 and still serves as the core of the present main library, having been expanded in 1952 to provide for 1,000,000 volumes and substantially more space outside the stacks. In 1956, the building was appropriately named the Louis Round Wilson Library.

While planning and campaigning for the new building, Wilson had typically been active in a number of other areas. He continued to expand the extension service, which was receiving wide publicity and praise and unquestionably made a large contribution to the positive reputation the university held in the state. Turning that goodwill among the friends and alumni of the university to good purpose, he laid plans for creation of a Friends of the Library organization. Just as he had earlier enlisted the faculty to help in gaining budgetary increases for the library, he now began to gain support outside the university. The new organization was formally chartered in 1931 and continues to the present to render valuable support to the library.

Finally, he had long been interested in university publications in his search for materials to exchange with other institutions. The university owned a print shop, run largely by students, in order to publish catalogs and announcements as well as the six serials published on the campus: *Journal of the Elisha Mitchell Society, James Sprunt Hill Historical Monographs, Studies in Philology, The High School Journal, The Journal of Social Forces,* and *The North Carolina Law Review.* After the war, Wilson began to urge the establishment of a university press and in 1922, at its incorporation, Wilson became its first director. Under his guidance, the press quickly gained a national reputation and became an invaluable outlet for Southern scholars seeking publication.

The new building was the occasion for a number of substantial gifts to the library. In 1928 Dr. A. B. Hunter, a charter member of the Friends of the Library, offered a collection of 460 incunabula for purchase, and the Hanes family of Winston-Salem bought the collection and presented it to the library. This gift became the nucleus of the collection built by the Hanes Foundation for the Study of the Origin and Development of the Book, founded at Wilson's suggestion by Dr. Frederic M. Hanes, the true bibliophile in the family. Yet another special collection came into existence in 1930, when the Board of Trustees formally created the Southern Historical Collection. This collection, like the North Carolina Collection, had its origin in the accumulation of historical materials in the previous century. A small vault had been provided in the Carnegie Building for the material, and a much larger fireproof vault was available in the new building. Now formally established, the collection had R. J. G. deR. Hamilton as its first director, and it was he who was largely responsible for the endowment amassed for the collection by the time the new library opened. With this support, Dr. Hamilton traveled to every corner of the Southeastern United States during the next 18 years, gleaning manuscript records on Southern life and history. Further enrichment of the library's research materials came in the later 1920s with its designation as the official government document center of North Carolina.

Wilson had been offering courses in library administration for years and in 1930 was granted $100,000 by the Carnegie Corporation of New York for the establishment of a library school in the university. Plans were laid in 1930–31; the school was accredited by the American Library Association during 1931–32; and in 1932 the first class graduated. Wilson himself had gained a national reputation and in 1926, in the midst of planning the new library, had been asked by Robert Hutchins, the president of the University of Chicago, to establish a library school at Chicago. He had turned down the invitation out of concern for the new building; but when it came again in 1932, he accepted. He departed for his new post, where he created an innovative school which set new patterns in library education—with the library's new facility, its expanded research resources, the university press, the extension bureau, and the library school as monuments to his career on the North Carolina campus.

The Depression and the War

Wilson had hired Robert Downs to assist him in the library, and Downs now became acting librarian and was appointed librarian in 1932. Under his new leadership, the library continued to grow, though slowly with the onset of the depression of the 1930s. It was the depression, too, which inspired library administrators to think in terms of greater interlibrary cooperation, perhaps the outstanding achievement of the Downs administration. A tradition of cooperation had grown up over the years between Chapel Hill and Duke University, and it was established practice for the faculty and students of one institution to use the library facilities of the other. In 1934, the General Education Board (GEB) granted $12,500 to the two universities to duplicate and exchange their card catalogs, laying the foundation for the North Carolina Union Catalog. This interinstitutional tie gained further strength the following year through a second grant from the GEB for $50,000 for the two universities to build up their collections in the biological, physical, and social sciences, and in English. The program called for a cooperative purchasing plan which would eliminate duplication of the materials acquired for one library in the other. From this experience grew a general cooperative acquisitions program under which the two libraries divided subject areas of responsibility for coverage, wherever possible. The same grant provided for a daily delivery service between the two campuses.

The union catalog received further impetus in 1935–36, when an earlier grant from the GEB enabled the library to purchase cards from the catalog of the John Crerar Library, the University of Chicago library, and the Harvard University library. This voluminous addition, with the Library of Congress depository (secured in 1925) and cards contributed from other libraries in the state, provided an effective bibliographic tool and a viable union catalog to which other academic libraries now began to contribute. As a consequence, the Chapel Hill–Durham area became one of the areas in the country served by a general union catalog.

Downs resigned in 1937 to take the directorship of the New York University library, but the movement toward cooperation which had begun during his administration continued. In 1940, the Rockefeller Foundation awarded a $25,000 grant to Tulane, Duke, and North Carolina, for the cooperative acquisition of Latin American materials. The three libraries divided the responsibility for coverage of the Latin American countries among them, North Carolina being assigned Argentina, Chile, Paraguay, Uruguay, and Venezuela. Like the earlier grant from the GEB, this initial effort led to a continuing program of cooperative acquisitions in this area, and today Duke and North Carolina still adhere to it.

Carl White had succeeded Downs as university librarian and resigned in 1940 to become director at the University of Illinois. After a year with Olan Cook as acting librarian, Charles Rush, formerly director at Yale University and the Cleveland Public Library, became White's successor. When Rush took over, the collection had almost doubled in size since Wilson's resignation 10 years earlier and now contained 403,055 volumes. The war certainly slowed that growth, but yet another grant from the Carnegie Corporation further cemented the cooperative programs between Duke and North Carolina. The grant was made to support efforts by the two universities to provide better library service to smaller institutions in the North Carolina and southern Virginia area on the basis of needs reflected in interlibrary loans.

In the years immediately following the war, there was a sudden and dramatic increase in graduate school enrollments, creating a much greater demand for library resources. This new situation and the fact that the library's growth had decelerated so much during the war—at the end of the decade, the collection had grown only 38%, approximately, and stood at 557,000 volumes in 1950—presented two urgent problems: the need for a substantial increase in the collection and an expansion of the building to house it. Appropriations in 1947 and 1949 provided for the new expansion, completed in 1952, and increased the stack capacity of the library to 1 million volumes. In 1950, concern about the quality of the collection led to the appointment of a joint library–faculty committee to identify deficiencies in the library's holdings. The committee reported that roughly $750,000 would be required to bring the quality of the library up to an acceptable level and urged substantial increases in state funds for this purpose. The results of this effort, the gifts prompted by the new addition, and the development of a Health Sciences Library to support the new medical programs more than reestablished the former rate of growth, and by the end of the 1950s, the library had doubled again and contained 1,234,000 volumes.

The Last 25 Years

Rush retired in 1953, and Andrew H. Horn became librarian in 1954. Horn's relatively brief tenure—he resigned in 1957 to return to California as head librarian at Occidental College—was devoted largely to accommodating the expanded acquisitions program and to creating a personnel structure for the library staff independent of the newly created state civil service structure. He was succeeded in 1957 by Jerrold Orne, previously librarian at Washington University and Air University. Orne began a series of reorganizational moves to bring the library more in line with its altered responsibilities. Departmental libraries had been part of the system since the previous century, and Orne examined these satellite collections for their effectiveness, deciding in the end to bring two back to Wilson Library. Internally, he divided the reference department into one department for the humanities and one for the social sciences and business administration. He also established an undergraduate library within the main library and consolidated the services of the union catalog and the photographic services in a new Interlibrary Loan Center.

One other major step was the abolition of the Extension Division. The original purpose of this unit, the provision of library service in areas in the state where that service from local agencies was inadequate, had become less necessary with the growth of public libraries over the years. Moreover, the supplementary service still required had been increasingly taken over by the State Library. The Bull's Head Bookshop, which had become a part of the Extension Bureau in its early years to assist friends and alumni of the university in their search for good current titles, was transferred to the Interlibrary Loan Center. Several years later, in

1964–65, its management was transferred out of the university librarian's office; and in 1967–68 both it and the library school moved out of Wilson Library to other quarters on the campus.

Aside from the continued growth of the collection, which brought its size to 1,722,000 volumes in 1970, Orne's administration was responsible for three other landmarks in the library's history: the establishment of corps of bibliographers for collection development, the construction of a separate undergraduate library, and the conversion from the Dewey to the Library of Congress classification. The bibliographic services began as a one-man operation but soon grew to a team of three covering the humanities and social sciences, to whom were added area studies bibliographers in Slavic, Oriental, and Latin American studies. This group coordinates the selection from the academic departments and supplements it where balanced collection development seems to require it.

The undergraduate library had its origins in the collection set aside for General College students within the Wilson Library in the 1930s. It had long been a desire of the library administration to house this collection in a separate structure created explicitly for this purpose. Funds were appropriated in 1963, but with planning and construction, it was not until 1968 that the building was opened. The new building, located immediately adjacent to Wilson Library, was named for former Chancellor of the University, Robert B. House. Some measure of the need for it can be seen in the fact that during its first year its 58,500 volumes accounted for more than 100,000 loans. However, that figure by no means represents total undergraduate use, for the Wilson Library, an open-stack collection since the mid-1960s, continued to be available to undergraduates.

The Library Today

The library system of the Chapel Hill campus today consists of the Wilson Library, the House Undergraduate Library, and 10 departmental libraries, with the Law Library of 160,000 volumes and the Health Sciences Library of 135,000 volumes. These last two collections are attached to their respective schools and are not under the administration of the university librarian. The total holdings in the system passed 2 million volumes in 1974. This figure does not include the 950,000 pieces of microform in the collections. The rare book collection now contains 821 incunabula, representing 342 printers from 60 cities in nine countries. In addition, there are 288 bound and 841 unbound manuscripts dating from the 10th to the 19th century. The Southern Historical Collection now has 5,538,789 items organized into 3,970 manuscript groups. The North Carolina Collection has grown to 124,000 volumes, in addition to 6,700 manuscripts and 3,200 maps. The staff now totals 232, of whom 85 are professional librarians. In 1972, Dr. Orne resigned to become a professor in the School of Library Science. After 7 months with Miss Louise Hall as acting university librarian, James F. Govan was appointed university librarian in 1973.

The library is a charter member of the Southeastern Library Network, organized for the application of computerized programs developed by the Ohio College Library Center to the operations of 100 libraries in the Southeast. With the capability of creating a central data bank on holdings through SOLINET, the union catalog, still housed in Wilson Library, will probably be retired from active growth. At present, it contains roughly 2,700,000 entries, contributed over 40 years by approximately 150 North Carolina libraries. Other applications of the computer have been made in the circulation system and in the production of a microfiche edition of the serial holdings of the library.

The university at Chapel Hill is now a member of a state system of 16 institutions. The first step in this direction occurred in 1932, when a Consolidated University was created, consisting of the Women's College at Greensboro, the North Carolina State College of Agriculture and Engineering, and Chapel Hill. From 1965 to 1972, when the present system was established, the number of institutions grew to its current size. The institutions added were the University of North Carolina at Charlotte, at Asheville, and at Wilmington; and Appalachian State University, East Carolina University, Elizabeth City University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, North Carolina School of the Arts, Pembroke State University, Western Carolina University, and Winston-Salem State University. The campus at Chapel Hill remains the largest and possesses much the richest library sources in the system. A council made up of the directors of all the libraries in the system is presently planning cooperative measures by which the total resources of the system can best serve all the institutions involved.

BIBLIOGRAPHY

Annual Reports of the Librarian, The Library, University of North Carolina, 1901–1974.

Battle, Kemp P., *History of the University of North Carolina*, Edwards and Broughton, Raleigh, 1907, 2 vols.

Brewer, Fisk P., "The Library of the University of North Carolina," n.d.

Rush, Charles E., ed., *Library Resources of the University of North Carolina*, Univ. of North Carolina Press, Chapel Hill, 1945.

Tauber, Maurice F., *Louis Round Wilson: Librarian and Administrator*, Columbia Univ. Press, New York, 1967.

Wilson, Louis R., *The Library of the First State University: A Review of Its Past and a Look at Its Future*, Univ. of North Carolina Library, Chapel Hill, 1960.

Wilson, Louis R., *The University of North Carolina, 1900–1930: The Making of a Modern University*, Univ. of North Carolina Press, Chapel Hill, 1957.

James F. Govan

NORTH CAROLINA. UNIVERSITY OF NORTH CAROLINA SCHOOL OF LIBRARY SCIENCE

Library training in the Southeast began at the turn of the century in two very different places: the public library of Atlanta and the University of North Carolina, Chapel Hill. As a result of the development of the first municipally supported library in a southern city, the Atlanta Board established a 6-month training program for apprentices so they could have an adequate staff upon the completion of the new Carnegie Library building. This training program, begun on October 7, 1899 under the direction of Librarian Anne Wallace, was to have a far-reaching effect on other states and particularly on North Carolina, where a number of the trainees would subsequently find employment. From the first there was a demand for such graduates in other southern cities. Recognizing the need, Miss Wallace encouraged Andrew Carnegie to make a 3-year grant to the Carnegie Library of Atlanta to establish a library school. Carnegie responded favorably to her request and, on September 20, 1905 the Southern Library School opened to students. It was to flourish as the only southern library school under a variety of names, the most common being "The Atlanta Library School," until it became a part of Emory University in the mid-1920s.

In Chapel Hill, North Carolina, meanwhile, the young librarian of the University of North Carolina, Louis Round Wilson, first offered courses in library science in the summer session, 1904, primarily for in-state students who wished to familiarize themselves with the routines of small public libraries. Wilson also offered courses during the regular academic year to train his student assistants in the university library. Library routines constituted the principal subject matter but material on the use of reference resources was also covered. From the beginning, such courses were open to students in the College of Arts, but library student assistants did not receive credit for these courses until 1906, and other students not until 1909. Thus the University of North Carolina became the first institution of higher education in the South to include library science courses in its curriculum.

Louis Round Wilson had assumed the duties of university librarian at North Carolina in 1901. He was a student in the Graduate School and was to receive his Ph.D. degree in English philology in 1905. For 31 years Wilson remained in the post of university librarian and his influence on the university, the state, the region, and his chosen profession was profound. As his biographer, Maurice Tauber, says of him, ". . . librarianship was a way to help people at all levels in their quest for knowledge and enlightenment and, particularly in the South, for a better life. He recognized the high correlation between access to information and personal and social development, and its resulting effects on national programs."

At about the same time that Wilson began offering library science courses at the university, he also became active in promoting other library causes in North Carolina. He was active in the formation of the North Carolina Library Association in 1904 and became its first secretary–treasurer. In 1906 he attended his first conference of the American Library Association and, along with other representatives from the state, invited the association to meet in Asheville, N.C., in 1907, an invitation which the association accepted. From 1907 to 1909 he helped draft and secure passage of legislation to create a North Carolina Library Commission, of which he became the first chairman. Subsequently Wilson had many contacts with a variety of library and other professional organizations and became a major proponent for library development in the region.

The library science summer school program at North Carolina remained essentially the same for the next two decades. However, summer school work grew in popularity, and in 1912 another librarian, Miss Minnie W. Leatherman of the North Carolina Library Commission, became a visiting instructor. By 1915 summer school students could also receive credit for a graduate course in bibliography.

Not until the 1920s was attention given to the training needs of school librarians. Library programs for elementary and secondary schools had been hindered by the fact that there was little attention given to school libraries by the state Department of Education, and the Southern Association of Colleges and Secondary Schools had not yet adopted library standards. Again Wilson was instrumental in promoting such standards. At its meeting in 1926, the Southeastern Library Association appointed a committee chaired by Dr. Wilson, to meet with the Southern Association officials and urge attention to this important matter. The following year the Southern Association adopted school library standards, though they weren't to be fully implemented until 1935. At about the same time as the adoption of school library standards by the Southern Association, the North Carolina State Department of Education was influenced to give credit for library science courses toward certification, and the enrollment of students in the library science program increased.

Meanwhile, as a result of the famous Williamson report, the American Library Association (ALA) had established its Board of Education for Librarianship in 1924 to study library training, establish standards, and improve the quality of library educational agencies. In 1925 Wilson was asked to join the board as the first member from the southern states. The following year the Carnegie Corporation launched its "Ten Year Program in Library Service," which was primarily designed to improve library education and underwrite support of the American Library Association. The Board of Education for Librarianship was to play a major role in the Carnegie Corporation program.

In the late 1920s the Southeastern Library Association asked the board to help determine the needs of the region for more effective librarian training. Sarah C. N. Bogle, secretary of the board, made a survey of library education needs and presented her recommendations at the Sixth Biennial Conference in 1930. The establishment of new schools and the strengthening of others resulted from her survey.

Just when Louis Round Wilson decided to push for the establishment of a School of Library Science at Chapel Hill is not clear, but as early as 1921 he wrote to the librarian of the University of Minnesota that he did not "believe any library in the

Southeast has equal opportunities for this type of work, but I want to be sure that no false steps are taken in the planning for it in the event we should decide to go into it." Wilson's annual reports first discussed the matter of expanding the department into a school in 1922/23. By 1926 he had begun an intensive study of the curricula of all library training agencies then in existence. At the same time he was building a collection of library commission reports, ALA publications, and other materials for the prospective school.

Two possible competitors for a library school appeared in the late 1920s. As a result of James B. Duke's bequest, Trinity College became Duke University and Duke officials expressed some interest in training school librarians in the School of Education. At about the same time, the North Carolina College for Women in Greensboro announced plans for a school library training program and opened an undergraduate department in library science in 1928. The Greensboro program, which lasted from 1928 until its merger with the program at Chapel Hill in 1933, was provisionally accredited by ALA. Wilson, who had discouraged the establishment of the Greensboro program, went ahead with his plans for a library school in Chapel Hill, since he believed that library education for all types of librarians should be built on a strong liberal arts base and should be established at the graduate–professional level. He was also interested in establishing a library science school which would rank with the best in the country.

In his search for funds with which to begin the school, Wilson had met with discouragement from the General Education Board and the Rosenwald Fund. Negotiations with the Carnegie Corporation were protracted but eventually he was successful. Frederick P. Keppel, president of the Carnegie Corporation, had expressed skepticism at first and had asked Wilson if it would not be better to provide fellowships for southern students to study at the strong library schools already existing in the North. That idea did not appeal to Wilson, who pointed out that there was a danger that good students would leave the South for their training, be attracted by the more advanced libraries, and not return. Establishment of a School of Library Science in Chapel Hill, on the other hand, would draw students from the entire South. Their contact with the wide range of scholarship at the University of North Carolina would prepare them for future leadership roles in their own region.

In the spring of 1929, the Carnegie Corporation granted the university $100,000 for support for a library school over a 5-year period, with the understanding that it would then become the responsibility of the state. This announcement came at the same time as the university opened a new $625,000 library building, the largest in the South at the time. Wilson had included space in the new building for his prospective school. The next 2 years were to be spent in preparing for the opening of the school in fall, 1931.

From the beginning, the University of North Carolina School of Library Science was intended to be a graduate–professional school. Requirements for admission included a B.A. degree from an approved 4-year college or university and a reading knowledge of French and German. Wilson thought that the university's resources for the training of academic librarians were unique in the South and while he intended for the school to train librarians for all types of library work, there was a special emphasis upon the academic librarian. That emphasis has continued through the years, so that approximately 37% of the graduates have been employed in academic libraries.

The School of Library Science opened on September 19, 1931, with 29 full-time students in attendance and with five faculty members: Dr. Louis Round Wilson, director, university librarian, and Kenan Professor of Library Science; Donald Coney, assistant director and professor of library science; Robert B. Downs, assistant university librarian and associate professor of library science; Susan Grey Akers, associate professor of library science; and Nora L. Beust, assistant professor of library science. Jean L. M. Fuller served as secretary and reviser. The course of study was to be 1 year in length and consist of nine courses, after which the student would be awarded the degree of Bachelor of Arts in Library Science. Wilson also intended to add a master's degree in library science once the bachelor's program had been firmly established.

At the end of the fall quarter, 1931, Dr. Wilson asked the Board of Education for Librarianship to inspect the school and the board sent its chairman, James I. Wyer, director of the New York State Library, for an accreditation visit in April 1932. Soon afterward the board granted the school provisional accreditation based upon Wyer's report:

> At its meeting on April 27, 1932, the Board of Education for Librarianship approved the report of the visitor, particularly his statement that the school is outstanding in (1) sufficient financial resources and prospects, (2) exceptional experience and qualifications of the faculty, and (3) satisfactory location and environment which is academic and unhurried in a small town at a university of enviable repute.

Thirty-seven students had been enrolled during the first year and the 29 full-time students received degrees at the June commencement in 1932. A variety of states were represented, but 24 students were from North Carolina. Jobs were not plentiful, as indicated by the fact that of the 47 graduates of the first two classes, only 23 held jobs in 1933, but the situation improved in the mid-1930s and the school reported that the number of its graduates holding jobs was slightly above the national average.

Aside from the economic depression, there were other factors at the end of the school's first year which presented difficulties. Louis Round Wilson, who had earlier turned down the deanship of the Graduate Library School at the University of Chicago, accepted that post and left Chapel Hill at the end of the summer. His next 10 years were to be the most productive ever for library education in the United States as he made the Graduate Library School an outstanding research institution. However, his departure presented serious problems for the fledgling school.

In 1931 the state legislature had passed an act to consolidate three institutions of higher education into a single university system: the University at Chapel Hill. the North Carolina State College of Agriculture and Engineering at Raleigh, and the College for Women in Greensboro. The ostensible reason was to eliminate duplication of programs and save money. Wilson had been a member of the Commission on University Consolidation to work out the details for implementing the legislative act, in conjunction with distinguished outside consultants. In pursuing its recommendations on training for library work, the commission and its consultants had noted that:

> Provision has been made for the training of librarians both at the North Carolina College for Women and at the University. In the College for Women the training is given in the senior year. At the University the instruction is at the graduate level during the regular academic year, but during the summer, work is given at the undergraduate level. The work at Greensboro is designed exclusively for school librarians, and at Chapel Hill the instruction is planned to train personnel for school, college and public libraries.

After reviewing all aspects of library education the commission determined that, although Greensboro had developed its instructional program before Chapel Hill, its program was narrower in scope and its budgets and enrollment were smaller than those of Chapel Hill. Therefore the commission recommended that the Greensboro program be phased out at the end of the academic year 1931–32. The reduction in state appropriations for higher education as a result of the worsening depression made early action on the recommendations imperative, but the following year saw a vigorous battle joined by the Greensboro faculty in favor of retaining their program.

The departure of the school's two administrators—Dr. Wilson for the University of Chicago, and Donald Coney, assistant director, for the Newberry Library—left the school without experienced administrative leadership at a crucial time in its history. The school had not yet proved itself to the state and would have to do so if state appropriations were to be secured following the end of the 5-year Carnegie Corporation grant. The depression made this a bleak prospect at a time when the internal struggle within the Consolidated University seemed likely to be prolonged.

The school was fortunate in having on the faculty Susan Grey Akers, whom Wilson had brought to the faculty as an associate professor. Miss Akers had held a variety of professional positions and had taught at the University of Wisconsin from 1922 to 1928. An expert in cataloging and classification, the first edition of her book, *Simple Library Cataloging,* had appeared in 1927, and was later to go through five editions and be translated into four languages. She was working on her doctorate at the University of Chicago when Wilson first contacted her. In July 1932, just before Wilson's departure, she had returned to Chicago for her final examination and she became the fourth person and second woman to earn the Ph.D. in library science. Upon Wilson's recommendation, Dr. Akers was named acting director of the school and promoted to the rank of professor in the fall of 1932.

The faculty for 1932–33 included Acting Director Akers, Assistant Professor Beust, and a new faculty member, Lucile Kelling, who had taught at the Los Angeles Public Library School, the University of Southern California, Columbia, and New York State at Albany. Robert B. Downs, who became acting university librarian, also taught on a part-time basis. Enrollment dropped but still included 18 full-time and six part-time students, plus 14 students from other departments taking courses in the school.

The major event of the 1932–33 year was the final approval of the merger of the Greensboro and Chapel Hill programs. At the request of President Frank P. Graham, Dr. Akers called two meetings of the respective faculties to develop recommendations. The first was held on March 28, 1933, and the second on May 18, 1933. Also involved in the conferences were the state supervisor of high schools, the state supervisor of high school libraries, the librarian of the Women's College, Duke University, and the librarian of the Greensboro Public Library. The issue was fundamental and was to occupy much time and attention of the profession for the next four decades: the relative value of a fifth year of professional training compared to undergraduate training for school librarians. Before fall 1933, the earlier decision to discontinue the Greensboro program was reaffirmed and Chapel Hill agreed to permit the Greensboro students to take courses as seniors under a special arrangement and receive a B.A. degree in education. Others interested in school library work could also receive this option, but the basic graduate–professional program would continue, with graduates receiving a B.A. in L.S. degree.

Although the compromise was not regarded as a satisfactory solution, the policy was continued until 1941, when the school again instituted its policy of requiring an undergraduate degree from an approved college or university for all students regardless of what curriculum they pursued.

Under the regulations of the American Library Association, the school applied for full accreditation and was granted the status of both a Type II (graduate) and Type III (undergraduate) library school in March 1934. The school was then admitted to the Association of American Library Schools in December 1934.

In 1935 the university dropped the designation "acting" from Dr. Akers's title and promoted Miss Beust to associate professor. Under another administrative change, the school became a part of the university's Division of the Library and Library School, and the students formed an alumni association of which Emerson Greenaway became the first president. For the first time the school also introduced a program to offer its regular curriculum to summer school students, who could complete work for the degree in three consecutive summer terms.

Prudent use of the Carnegie Corporation grant and a reduction in faculty salaries to conform to the reductions made in salaries supported from state funds had enabled the school to establish an endowed scholarship fund of $10,000 (later increased to $15,000) and stretch the original 5-year grant to 6 years. Efforts were made to secure additional Carnegie Corporation funds, but the corporation declined to continue annual support, though it did hold out some hope for a future endowment fund. Therefore, the university assumed support of the school with state funds in 1937.

By the end of the decade there had been a number of changes in the school. Robert B. Downs resigned as university librarian in 1938 to become director of libraries at New York University and was succeeded by Carl M. White. In January 1938, Nora Beust was granted a leave of absence to serve as the first school library specialist in the U.S. Office of Education. She did not return to the faculty but resigned in August 1939. The improved financial picture was indicated by the fact that the school had granted 243 degrees and 75.7% of the total alumni held library positions, while another 13% were women alumnae who had married and were not employed. Dr. Akers indicated that by November 1, 1939, 94.35% of the alumni desirous of being placed were actively engaged in library work. The summer session of 1940 reached a high point in enrollment with 142 students, of whom 51 were candidates for degrees. Enrollment during the academic year had remained fairly stable at between 30 and 40 students.

In September 1940 the Carnegie Corporation announced a second gift of $100,000 for endowment to further the school's development. The following year the school changed its degree designation to Bachelor of Science in Library Science to avoid confusion with undergraduate programs which gave a Bachelor of Arts degree with a major in library science. Shortly thereafter it dropped its undergraduate program leading to the degree Bachelor of Arts in Education. That program had never had a large enrollment and the number of students had dwindled steadily. The Board of Education for Librarianship then dropped the Type III designation for North Carolina but confirmed its Type II accreditation.

In 1939, the North Carolina General Assembly had authorized the establishment of a professional school in library science at North Carolina College for Negroes in Durham. Dr. James E. Shepard, president of the college, contacted Dr. Akers in 1941 to ask her assistance in setting up the program. Dr. Akers, whose title was changed to dean in January 1942 and thus became the first woman dean at North Carolina, agreed to help and served as dean of both schools until October 1, 1946, when Dorothy Williams became dean of the Durham college.

The Second World War apparently caused fewer disruptions for the North Carolina school than it did for many others. However, there was a drop in enrollment at a time when the demand for librarians was stronger than ever. Nonetheless, the regular academic year enrollment never dropped more than 30%, even during its lowest year, 1944–45.

The other serious disruption was the inability to make the regular trips to libraries along the East Coast. From 1932 until 1960 the school required a trip to observe other libraries during the 1-year program, under the rubric of a noncredit course for observation trips, demonstrations, and lectures. A faculty member supervised these trips and they extended at first only to nearby libraries, but later went as far as New York City. This was regarded as a very important part of the student's program. Only during World War II was it discontinued.

Practice work as such was never a part of the school's curriculum although, as Dean Akers suggested in her 1941/42 report, some instructors had regularly used the university library and other libraries in the area to demonstrate library skills, such as a project to compile a list of books amounting to $4,000 for a federal project in North Carolina. These books were purchased and later one member of the class had the opportunity of cataloging and classifying them. The problem of a clinical experience for students in library science has been a continuing one since Melvil Dewey's day, and the faculty recognized this, but generally has planned such exercises as a regular project in conjunction with the illustration of theory in the class work.

One advantage provided by the income from the Carnegie Endowment Fund was the school's ability to appoint Dr. Louis Round Wilson as a part-time professor of library science after his retirement from the deanship of the Graduate Library School at Chicago in 1942. Wilson offered two courses, "The Library Movement in the South," and "University Library Administration." For the next 17 years he would teach an occasional course or two in the school in addition to his indefatigable activities as a consultant, surveyor, and author. In the mid-1940s he served as chairman of the university's sesquicentennial activities and then conducted a major regional survey of library resources and services under the sponsorship of the Southeastern Library Association and the Tennessee Valley Authority. The Wilson-Milczewski survey, *Libraries of the Southeast,* appeared in 1949. Twenty-five years later one of the school's alumnae, Mary Edna Anders, was asked to undertake a second regional library survey. For many years Dean Wilson had an office in the school's quarters, was available for consultation, and could teach courses when needed.

After World War II, library schools in the Southeast as elsewhere began a serious re-examination of their curricula. The 1-year B.S. in L.S. was beginning to be regarded as obsolete. A number of conferences were held but two very important ones were the Chicago Conference in August 1948, and the Princeton Conference in December 1948. For the former conference, Dr. Wilson gave a paper on "Historical Development of Education for Librarianship in the United States." In his essay Wilson noted that many schools were changing the degree awarded at the end of the fifth year of study from a B.S. in L.S. to an A.M. or M.S. He further stated, "The most significant change is to be found in the nature of the curricula leading to the new Master's degree. Requirements for this degree have been restated and represent an attempt at placing pre-professional, professional and graduate-professional studies in a logical order and in keeping with the spirit of professional and graduate study."

Dean Akers, who had attended three conferences on library education in 1947–48 (although not the Chicago and Princeton conferences), echoed Dr. Wilson's words in her report for the following year:

> During the past two years there have been significant changes in the curricula and degrees offered by the accredited library schools as a result of the new demands being made upon librarians and the dissatisfaction that has long been felt with the Bachelor of Science in Library Science as a professional degree. The trend is toward the Master's as the first professional degree. The Board of Education for Librarianship . . . is examining the proposed changes and granting approval for an experimental period rather than setting up its own standards. The Faculty of the School are studying the changes that have been made elsewhere, recon-

sidering the curricula offered, and working on tentative plans for a Master's program, taking into consideration local needs and requirements.

The ferment for curriculum change was affecting the program at North Carolina, though not as rapidly as at other places. In January 1948, in an attempt to meet the perennial changes posed by school library certification requirements, the faculty had introduced a 28-quarter-hour undergraduate program which provided a base for the regular professional degree and also met the needs for school library certification. Completion of this 28 hour sequence and some other requirements entitled the student to a bachelor's degree in education. In a further attempt to strengthen the school program, Margaret Kalp, a graduate of New Jersey College for Women and the University of Michigan, had been added to the faculty as an assistant professor. Miss Kalp had had experience in both school and public library work and came to Chapel Hill from George Peabody College for Teachers, where she had been librarian of the Demonstration School Libraries and a lecturer in library science. With her help the faculty developed a graduate program for school librarians which would culminate in a degree of Master of School Librarianship. Although the first students entered the program in 1950, the M.S.L. attracted relatively few students over the period of its existence (only nine completed work for the degree), but it was intended as a step toward upgrading the preparation of school librarians. Eventually the faculty voted to discontinue the program in 1958, and the final M.S.L. degree was conferred in 1962.

In sorting out the needs for the future, a number of changes occurred in the internal operations of the school. Lucile Kelling, who had been promoted to associate professor in 1939 and was subsequently promoted to professor in 1946, assumed responsibilities as the school's placement officer in October 1945, to take care of the workload resulting from the increased demand for librarians. Miss Jean Freeman, who assumed the duties of secretary to the school in 1941, was appointed assistant to the dean in September 1947, to reflect more realistically her responsibilities.

To Miss Kelling was also given the task of supervising the curriculum changes from the bachelor's to the master's degree in library science. Dean Akers had accepted an invitation from the U.S. Army to serve as a consultant for the Library Science Institutes in Japan during 1950–51 and Miss Kelling was made acting dean. Dean Kelling headed a committee which secured approval of the new M.S. in L.S. degree program in the spring of 1951. Entrance requirements for the new program included a bachelor's degree, proficiency in a modern foreign language, 30 quarter hours in an approved basic library science program, and an interview. Minimum requirements for completion of the M.S. in L.S. degree included three quarters in residence, a thesis, and completion of nine graduate courses in library science and a minor field. Although the university official bodies approved the program, they did not respond to the frequent pleas of the school during the next decade for additional faculty with which to implement it and to move ahead to a doctoral program as had been expected. Since the school did not abandon the B.S. in L.S. degree until 1955, this meant that there were four curricula being offered in the early 1950s—with a full-time faculty of four, including the dean, and only two part-time faculty members. Dean Akers returned from Japan in September 1951, to find the school housed in expanded quarters as a result of an addition to the university library building. She hoped to obtain faculty to support the newly approved master's programs and argued vigorously for an additional two positions. Unfortunately, neither her hopes nor those of her successor were to be realized. A full decade would pass before a new faculty position was given to the school.

The year 1953–54 was a significant one for the school. Dean Akers announced her intention to retire and also indicated that she would be a visiting faculty member in Iran the following year. Earlier, in June 1951, the Alumni Association had established a Susan Grey Akers Scholarship Fund. The school changed from the quarter to the semester system, and plans were made to abandon the B.S. in L.S. program.

Succeeding Dean Akers was Professor Lucile Kelling. As the school's placement officer, as a teacher of three of the required courses, as chairman of the curriculum revision committee for the master's degree, and as acting dean in 1950–51, Lucile Kelling was thoroughly familiar with the school's opportunities and problems, and neither daunted her. She led the faculty through the first thorough course-by-course revision of its program and sought to upgrade the entire program. The B.S. in L.S. degree was discontinued in 1955, and the M.S.L. degree in 1958. The American Library Association accredited the school under its 1951 revised standards in June 1957. In the mid-1950s a nondegree program for public librarians was instituted, and courses in law and medical librarianship, taught by the law and medical librarians, respectively, were added to the curriculum. For three successive years the school had students selected for the Library of Congress internship program, 1957 through 1959, and Epsilon Chapter of Beta Phi Mu, the library science honorary, was established in 1958.

To teach the cataloging and classification courses which had been Dean Akers's specialty, Carlyle James Frarey, assistant librarian at Duke University, joined the faculty as an associate professor in 1954. He had taught at Columbia and was managing editor of the *Journal of Cataloging and Classification*. Sarah Rebecca Reed, who had joined the faculty in 1952, was succeeded by Robert A. Miller, one of the school's graduates and a Cornell University staff member, in 1955. Visitors, temporary and part-time faculty, and summer faculty helped out, but for the major part of Lucile Kelling Henderson's tenure she had only three full-time faculty: Kalp, Frarey, and Miller, plus her assistant to the dean, Jean Freeman. All three full-time faculty members were working on doctoral degrees and Dean Kelling (after June 1957, Mrs. Archibald Henderson) was very much aware of the need to institute a doctoral program at Chapel Hill. However, she was also aware of the fact that the university had never adequately funded the master's degree program which was begun in 1951. Increased enrollment in the late 1950s made the likelihood of any new programs seem remote.

Lucile Kelling Henderson announced her retirement to become effective at the end of the 1959–60 year. She had served the school for most of its three decades and her final report reflected her concern that the school should receive the support necessary to become "one of the great schools, a leader in the region, fulfilling the dreams of its founder, Dr. Wilson, and its two deans, Dr. Akers and Mrs. Henderson." Her retirement ended an era of the school. Together she and Dean Akers had guided the changing programs over all but 1 year of its existence. Although Deans Wilson and Akers had occasionally returned to the classroom to help out when faculty members were on leave, both taught for the last time in 1959. Thus all the faculty who had been connected with the school from its earliest days had retired. There had been 30 years of steady growth and the development of programs of recognized quality, though the decade of the 1950s saw a decline in the total number of graduates.

To succeed Dean Henderson, the university named Associate Professor Carlyle J. Frarey acting dean for a 2-year period, later to be extended for another 2 years. Frarey had joined the faculty as an associate professor in 1954 after serving as assistant librarian at Duke University. He had worked at Oberlin, City College of New York, and had taught at Columbia. Active in professional association work, Frarey, like Dean Akers before him and Dean Kalp afterward, had served on the ALA Council.

Dean Frarey assumed the leadership role in the school at a time when increasing demands were being made upon library schools to prepare more librarians and to provide more specialized training plus additional opportunities for continuing education. Between 1957 and 1960 the school's enrollment had increased 89%, with no increase in faculty size. Yet the number of graduates had remained small, chiefly because the time to secure a master's degree was twice what it had been with the B.S. in L.S. degree and a good many students completed course work without ever finishing their thesis. About 185 students were in this category in the spring of 1962. As Dean Frarey noted in his first report, "this program now ranks as the longest offered in any of the accredited library schools."

Frarey was to preside over a thorough overhaul of the curriculum, expand the faculty and the enrollment, and prepare a formal proposal for a doctoral program, all within a short 4 years. His second year as acting dean saw the first increase in faculty since the graduate master's program was approved in 1951. In September 1962, Doralyn J. Hickey, staff member in technical processes at Duke University, joined the school as an assistant professor. Dr. Hickey was also the first full-time faculty member to hold the doctorate since Dean Akers. Her appointment was followed the next year with two other faculty members with doctorates: Fred J. Heinritz in the area of science literature and scientific management, and Budd Gambee, the first specialist in audiovisual materials. To strengthen the school librarianship program and to supervise the school's library, Ruth Stone, a graduate of the M.S.L. program and a high school librarian, was selected as lecturer-librarian.

Dean Frarey had been especially conscious of the need for curriculum revision and his relatively small faculty moved vigorously to make the program shorter and more flexible. The new curriculum, introduced in June 1963, included a 39-

semester-hour program of graduate work, a research paper instead of a thesis, and the abandonment of the 18 hour prerequisites. The net effect was to make it possible for the student to complete his work for the M.S. degree within two regular semesters and one summer session.

Scholarship aid for students had always been a problem, despite the tuition scholarships made available under the original Carnegie grant. In his first year as Acting Dean, Frarey worked out a program with the university library for seven university library assistantships, where the student could work 20 hours per week and take a half-load in the school at a stipend of $1,500. This program represented the first substantial subsidy for students and has worked so well that there are now about 20 university library assistants. Other scholarship aid has been provided by the Akers Fund, the H. W. Wilson Foundation, and through contracts with the states of Alabama, South Carolina, and West Virginia through the Southern Regional Education Board. Only one state now has such a program with the school, the State of Virginia, whose contract through SREB began in the fall of 1974. Some funds have also been available from state libraries through LSCA and through other agencies on campus, but the university library assistantships and a contract with the U.S. Environmental Protection Agency Library provide the most significant amount of student aid.

By the end of Dean Frarey's 4 years, when he resigned to join the faculty at the School of Library Service, Columbia University, major progress had been made. He had been fortunate in the support he received from the university for new faculty positions and for curriculum revision. The doctoral proposal, so long talked about and deferred, was to be deferred once more as a result of his departure.

Assuming the deanship on an acting basis for a 1-year term, which later was to be extended twice, was Associate Professor Margaret Kalp. At the time of her appointment, Miss Kalp was serving as president of the North Carolina Library Association, was a member of the ALA Council, and a director on the Board of the American Association of School Librarians.

Under normal circumstances one might have expected the school to mark time as a result of acting administrators. However, though the doctoral program was again delayed, the student enrollment continued to rise and the number of graduates doubled between 1964–65 and 1965–66 (see Table 1). By the calendar year 1971, the school reached a high point of 103 degrees awarded. As a result of the large enrollment increases in the 1960s, space in Wilson Library was increasingly inadequate. Tentative plans were made for the school to move into Manning Hall upon the completion of a new building for the Law School. Two new courses were added in data processing, and the faculty assisted in an institute for the preparation of school media personnel in 1967 under a grant from the National Defense Education Act.

A long search for a permanent dean ended with the appointment of a member of the search committee, Dr. Walter A. Sedelow, Jr., as dean effective June 1, 1967. Sedelow, associate professor of sociology and information science, was

TABLE 1

Degrees Awarded

	B.A. in L.S.	B.S. in L.S.	M.S.L.	M.S. in L.S.	Total
1932–1941	259	42			301
1942–1951		316			316
1952–1961		120	8	95	223
1962–Dec. 1971			1	702	703
Jan. 1972–Dec. 1973[a] (2 years)				189	189
Grand Total					1,732

[a] Beginning in 1972, degrees awarded in May, August, and December and counted by calendar year.

particularly interested in expanding the interdisciplinary and information science portions of the program. He reinstituted a committee to design a doctoral program and made plans for further enrollment increases. The school received the first of its U.S. Office of Education grants for Title II-B fellowships in 1967, in the amount of $87,000, and this was followed by $56,000 in 1968 and $44,000 in 1969. The problem of finding support for students was solved, at least temporarily. Dean Sedelow was also active in promoting the research activities of the faculty. Dr. Heinritz resigned in 1967 to accept a position at Southern Connecticut. In the fall of 1968, Kenneth D. Shearer, a doctoral student at Rutgers; and Frances H. Hall, a law librarian and former staff member at UNC at Greensboro, joined the faculty as assistant professors. Dr. Shearer was to revise the basic course called "The Library and Society" to include an introduction to program language, and Dr. Hall would expand the offerings in law librarianship as well as teach courses in reference and government publications. Dean Sedelow was much interested in the possibility of specialized courses which had earlier been recommended by Dean Frarey, and Dr. Mattie U. Russell, manuscripts librarian at Duke University, began a new course in the Administration of Archives and Manuscript Collections in 1969. Other faculty to join the school during Dean Sedelow's 3 years included Dr. Gertrude London, as associate professor; and Dr. Martin Dillon, who was full-time for the first year and then held a joint appointment with the Department of Computer and Information Science in 1970.

When Dean Sedelow resigned in the summer of 1970 to accept a position at the University of Kansas, the school could look back upon a decade of progress despite a period of changing leadership. Faculty and enrollments had increased, and the number of graduates had doubled. Federal funding for scholarships, the introduction of the university library assistantships, and a general expansion in the demand for librarians had all had a decided impact upon the school. Moreover, the curriculum revision in the early 1960s and curriculum expansion in the late sixties paved the way for future advances in this area. But despite planning and hopes, no doctoral program materialized.

Sedelow was succeeded by Dr. Ray L. Carpenter, Jr., who became acting dean for the next 18 months. Carpenter had joined the faculty in 1960 as an instructor when he was working on his doctorate in sociology. He was made associate professor in 1969. Interested in interdisciplinary research, he had also carried major responsibility for planning the renovation of Manning Hall and supervised the move to the new quarters. Included in the new space were five classrooms, 13 offices, and separate library and audiovisual facilities. (See Figure 1). The school shared the building with the university's Institute for Research in Social Sciences, which provided access to its statistical lab and computer terminals for the school's students. Professor Robert Miller resigned in 1971 and was replaced by Dr. Fred Roper.

In the spring of 1971, Dr. Edward G. Holley, then director of libraries at the University of Houston, Texas, was selected as the new dean to assume responsibilities on January 1, 1972. He came at a time when the school was again reviewing its curriculum, when the federal support for scholarships was declining, and when the

FIGURE 1. *Manning Hall—home of SLS since 1970.*

never-inaugurated doctoral program was still under consideration. The university decided to stabilize its enrollment, and therefore the period of expansion of the 1960s came to an end.

Nonetheless, in anticipation of the doctoral program, some faculty expansion has been possible. Dr. Haynes McMullen, who had served on the faculty of Indiana University for 19 years, joined the faculty in September 1972, as professor of library science. In 1972 Dr. Frances H. Hall resigned, and Dr. Mary E. Kingsbury replaced her in 1973. Dr. Jerrold Orne, university librarian and professor of library science for 17 years, became a full-time member of the faculty in January 1973. In January 1975, Dr. Lester Asheim, former dean and professor at the Graduate Library School, University of Chicago, joined the faculty as William Rand Kenan, Jr., Professor of Library Science.

As indicated earlier in this article, the faculty have from the beginning been active in professional association work and in scholarly activities. Both Dr. Akers and Dr. Hickey received the Margaret Mann Award for outstanding contributions in the area of cataloging and classification. Deans Akers, Frarey, and Kalp have served as members of the ALA Council, and Deans Akers and Kalp and Professor Nora Beust all served as presidents of the North Carolina Library Association. Dean Holley served as president of ALA in 1974–75, and both he and Dean Frarey served as chairman of the ALA Publishing Board. Dr. Hickey has been a member of the ALA Committee on Accreditation, and a number of the faculty have served on editorial boards for professional journals.

In the fall of 1974, as a result of a 2-year study by a committee of the faculty, the alumni, and students, a revised master's program was instituted. A new 12-hour block of basic material taught by the entire faculty is required of all students. The remainder of the students' program consists of electives. For those who have another graduate degree, the program is reduced to 30 semester hours, while others are required to take 36 semester hours. Continuing as a part of the program are the master's paper and the comprehensive examination, as well as proficiency in a foreign language.

In its more than four decades, the school has developed a strong fifth-year program in library science serving the southeastern region and the state. Current enrollment has been limited to 150 students (head count) per year, with a prospective addition of a doctoral program of 10 to 12 students per year. The enrollment reflects an almost even division between students from North Carolina and those from other states, with the largest number other than North Carolina coming from Virginia, approximately 15 students per year.

Students enrolled in the program in fall 1973 had an average score of 1209 on the Graduate Record Exam and an average grade point average of 3.37 based on a 4.0 maximum. Of the 228 students who applied for admission, about half, or 116, were admitted.

Of the 1,732 graduates of the school through December 1973, approximately 63% are still employed in library service. Of that number, some 39% hold jobs in North Carolina. The majority of the graduates traditionally have gone into academic librarianship, and 37% of those currently employed work in college and university libraries. Fourteen percent are employed in school libraries, 22% in public libraries, and 24% in special libraries.

There is a current faculty of five professors, five associate professors, three assistant professors, and one lecturer. In addition, there are part-time faculty members in specialized areas.

The Library Science Library has operated as a departmental library under the administration of the university librarian since 1970. Its resources include 39,190 volumes, 987 subscriptions to journals, and a variety of microprint and nonprint materials. Also available to library school students are the resources of the university library system, which includes more than 2 million volumes and 5½ million manuscripts.

BIBLIOGRAPHY

American Library Association, *A Study of the Library School Situation in the Southern States*, prepared by Sarah C. N. Bogle, American Library Assoc., Chicago, 1931.

Callaham, Betty E., "The Carnegie Library School of Atlanta," *Lib. Quart.*, **37**, 149–179 (April 1967).

Churchwell, Charles D., "Education for Librarianship in the United States: Some Factors Which Influenced Its Development Between 1919 and 1939," unpublished Ph.D. dissertation, University of Illinois, 1966.

Tauber, Maurice F., *Louis Round Wilson: Librarian and Administrator*, Columbia Univ. Press, New York, 1967.

University of North Carolina, School of Library Science, *Annual Report of Director*, 1932–1941.

University of North Carolina, School of Library Science, *Annual Report of Dean*, 1942–1974.

Wilson, Louis Round, *Education and Libraries: Selected Papers* (Maurice F. Tauber and Jerrold Orne, eds.), Shoe String Press, 1966.

Wilson, Louis Round, "Historical Development of Education for Librarianship in the United States," in *Education for Librarianship* (Bernard Berelson, ed.), American Library Assoc., Chicago, 1947, pp. 44–59.

Wilson, Louis Round, "Library Development in North Carolina," *Lib. J.*, **48**, 21–26 (January 1, 1923).

Wing, Mary Jane, "A History of the School of Library Science of the University of North Carolina: The First Twenty-five Years," unpublished M.S. thesis, University of North Carolina at Chapel Hill, 1958.

EDWARD G. HOLLEY

NORTHEASTERN ILLINOIS UNIVERSITY LIBRARY

The library at Northeastern Illinois University serves an emerging urban-commuter university on the move. Situated on Chicago's northwest side, less than a mile from the nearest suburb, this northernmost state university in Illinois continues to draw increasing enrollments, attracting most of its more than 6,200 full-time equivalent students from the mushrooming suburbs north and west of Chicago as well as from the ethnic diversity of the city itself. In fact, the education and study of many of these urban population groups has become a prime emphasis of the university.

This emphasis is reflected in course offerings and special innovative programs including those at three ethnic studies field centers. In addition to welcoming ethnics on the main campus, the university has established these centers in the heart of major ethnic areas themselves. They are the Center for Inner-City Studies (in the Black Ghetto on Chicago's south side), the Uptown Center (a northside point of entry for Appalachians and American Indians), and El Centro de Recursos Educativos/Educational Resource Center (operating within a Spanish-speaking residential area of Chicago's midwest side). A major undertaking of the main library is the development of working collections in each of the centers, including a library at the Center for Inner-City Studies housing a limited undergraduate collection and a graduate collection for Black and ethnic studies.

Although the institution claims a fairly long local history (established as a Cook County Normal School in 1869, it became Chicago Teachers College in 1938), its importance nationally came only after 1965, when it became a state school known as Illinois State Teachers College—North. In 1967 it became Northeastern Illinois State College, and adopted its present name in 1971. Accordingly the library was fairly insignificant before 1965, when two small collections from Chicago Board of Education schools were merged to form the nucleus of the library on the new campus at Bryn Mawr and St. Louis Avenue. With state funding, the library grew at a rather rapid pace to its present quarter-of-a-million-plus volume status. Mr. Seymour Schneider was then director, and continued in that position until his death in July 1971. Mrs. Sophie Black, head of public services, and Mr. James Wilson McGregor, head of technical services, took charge until Mr. Melvin George became director in July 1974.

Although librarians at Northeastern had enjoyed faculty status with rank long before the school became a state institution, a formalized faculty Department of the Library came into being only in 1972. Sophie Black was the first department chairperson, followed by Mr. Albert Jen, who assumed that post in April 1974.

The collection includes about 300,000 volumes, 4,500 periodical titles, and 200,000 microtext units, including ERIC and the Human Relations Area Files. About $250,000 is spent annually on books and periodicals, and about 25,000 volumes are added each year. Collection strengths include education of the disadvantaged, ethnic studies, and urban affairs. The library is a depository for federal and state documents, and it assumed responsibility for university archives in 1971. Over 17,000 archival units are now housed in the library. The pop culture collection includes extensive holdings of science fiction magazines and comic books.

Completion of a new five-level library on the main campus is expected in late 1977. The new facility is expected to accommodate about half a million volumes.

JAMES WILSON MCGREGOR

NORTHERN ILLINOIS UNIVERSITY, DEPARTMENT OF LIBRARY SCIENCE

See *Illinois. Northern Illinois University, Department of Library Science*

NORTHERN ILLINOIS UNIVERSITY LIBRARIES

The University

As this is being written, Northern Illinois University is celebrating its 75th anniversary. In September 1899, Northern Illinois State Normal School at DeKalb first opened its doors for instruction, with a faculty of 14 and two librarians. Student enrollment totaled 173. The following year 13 women and three men were granted 2-year diplomas.

A change of name in 1921 to Northern Illinois State Teachers College marked the school's beginnings as a 4-year institution empowered to grant the Bachelor of Education degree. Expansion continued until, 30 years later, in 1951, the graduate school was established with the power to grant the Master of Science in Education degree. At this time, Northern had 1,893 students and 162 full-time faculty members.

In 1955 the college's name was changed to Northern Illinois State College and 2 years later, to Northern Illinois University. Educational programs expanded rapidly, as did enrollments. In 1957, the year the college became a university, there were 4,744 students. Ten years later, enrollment had more than tripled to 16,440 students. From a peak enrollment of 22,817 in 1970–71, the total number of students has since decreased to 19,971 in 1973–74.

The university has five major divisions: College of Visual and Performing Arts, College of Professional Studies, College of Education, College of Business, College of Liberal Arts and Sciences—plus the Graduate School. Programs are offered leading to the Doctor of Philosophy degree in four fields: English, Chemistry, History, and Psychology. In addition, the university grants the Doctor of Education Degree (in Education and Business Education). Sixth-year level programs include the Certificate of Advanced Study in 21 fields, the Master of Business Administration, and the Master of Fine Arts degree. A wide variety of master's and bachelor's degrees is also given.

There is a large continuing education program taught both on and off campus. The university operates the Lorado Taft Field Campus 35 miles from the main campus, specializing in outdoor education for majors in Elementary Education.

The Libraries

Books for the original campus library were purchased from funds donated by Jacob Haish, a wealthy resident of DeKalb. The Haish Library, as it subsequently was named, was housed in a wing of one of the first buildings constructed on campus and remained in those quarters for over 50 years. In 1952, a separate building, the Swen Franklin Parson Library, was completed. Lacking funds to hire professional movers, the entire library collection of 83,000 volumes was moved to the new building in a single day by student volunteers.

The Parson Library has twice been expanded, the last time in 1965. Incorporating 131,474 square feet of floor space, the library has space for approximately 500,000 volumes and 2,000 readers. Besides the main library on campus there are a chemistry and physics library, a media and instructional technology center, a map library, a music library, and a library at the Lorado Taft Field Campus.

The dramatic growth of university educational programs and student enrollments has been matched by the expansion of library collections. Table 1 records these increases, which have taken place over a 25-year period.

THE COLLECTIONS

The general library collection at Northern Illinois University is especially strong in material on American colonial history, American social and labor history, Black

TABLE 1

Growth of Northern Illinois University and Its Libraries

	1950	1960	1970	1974
Student enrollment (fall)	2,073	6,112	22,519	19,971
Faculty	134	381	1,248	1,254
Librarians	6	14	54	45
Library				
Books and bound periodicals	74,940	142,588	430,939	702,948
Periodical subscriptions	467	1,172	6,379	8,411
Government documents[a]	—	—	233,114	386,947
Microform units	NA	NA	315,197	635,799
Phonograph records	NA	2,127	11,121	16,518

[a] Not counted until 1963/64.

studies, 18th-century English literature and history, international relations, and Southeast Asia.

Numerous special collections include the Nisbet–Snyder collection of English and American published drama and prompt-books, primarily of the 19th century; extensive holdings of Lord Byron, Walt Whitman, Angus Wilson, Booth Tarkington, and Robert Burns; a unique compilation of materials by and about Jeremy Taylor; and modern and contemporary Anglo-Irish writers featured in book and manuscript materials augmenting a nearly complete compendium of the publications of the original Cuala Press. English and American science fiction magazines from the 1920s to date are available in quantity.

Other holdings include a large and expanding list of materials produced by American private presses, with emphasis on those in the Midwest; dime novels and popular literature; and an extensive collection of materials about the State of Colorado. There is a separate rare book collection of approximately 5,000 volumes.

AUTOMATION

Spurred on by the need for better control of technical processes, the library in 1968 began planning for automation. A staff for data processing was added and, after some preliminary work on technical processes work routines, produced a master control list which indicated the status of library materials as they passed through the acquisitions and cataloging departments. The library began using MARC II tapes in late 1970 for cataloging and by 1972 was inputting original cataloging data into computer storage.

So far as is known, the Parson Library presently has one of the largest machine-readable catalogs in an academic library, with over 260,000 entries. A specially funded project has been established to convert the entire catalog into machine-readable form by 1976. A refined control list of library materials called Processing in the Library (PIL) has recently been developed to provide for library staff and users vital information about library materials from the time they are ordered until the items are shelved and their catalog cards filed.

Plans call for application of automation to serials functions and to the circulation of books. The Parson Library has joined other libraries in Illinois in subscribing to the computer-based cataloging services of the Ohio College Library Center.

The Future

During the present time, when enrollments at colleges and universities throughout the United States are either leveling off or diminishing, Northern Illinois University is cautiously predicting modest increases over the next several years. Perhaps by 1980 on-campus enrollment will reach 24,000. The university is favorably located in the most densely populated section of the state.

The university's educational programs are being expanded and modified to meet the needs of students of the future. There is hope that doctoral programs can be instituted in additional fields. Northern Illinois University's extension education program presently is the fastest growing in the state.

NEW LIBRARY

Ground was broken for a new general library in the spring of 1973. The building, named Founders Memorial Library, will be one of the largest on campus. Five stories high, it will have a gross area of 293,323 square feet (204,139 net). Designed by architects Hellmuth, Obata, and Kassabaum, the structure is expected to be completed by late 1975. Library Consultants, Inc., aided in the planning and equipping of the building. Space is provided for the shelving of approximately 1,000,000 volumes and seating for 2,400 readers. Vertical transportation includes both elevators and escalators to all floors of the building.

The library is to be organized by subject. There will be nine subject clusters on the upper floors, each with its own subject specialist who will act as bibliographer and reference librarian. The main entrance level will have a general reference department, the union card catalog, circulation, and the bound periodicals collection, except for those titles in pure science which will be located in either the departmental science library or with the science subject cluster. A room specially equipped for the use of the visually handicapped is also on the entrance floor.

Upon occupation of the new building, the Parson Library will be remodeled for use as an undergraduate library. When a planned second-phase expansion of the new building is completed, the undergraduate library function will be moved in with the main library. A third-phase expansion of the building, if carried out, would result in the central library at Northern Illinois University having nearly 1 million square feet of floor space.

LESTER K. SMITH

NORTH LONDON. THE POLYTECHNIC OF NORTH LONDON, SCHOOL OF LIBRARIANSHIP

See *London. The Polytechnic of North London, School of Librarianship*

NORTH TEXAS STATE UNIVERSITY—SCHOOL OF LIBRARY AND INFORMATION SCIENCES

North Texas State University (NTSU) is located in Denton, a city of 45,000 population, some 37 miles equidistant from Dallas and Fort Worth. The greater Dallas/Fort Worth/Denton triangle encompasses one of the leading cultural, financial, and industrial centers of the nation with its focal point in the world's largest airport within 30 minutes drive of the 360-acre NTSU campus.

Privately founded in 1890 as a small normal college, NTSU has since become a large, multipurpose, state-supported university organized under its own Board of Regents. Some 17,000 students are enrolled from all states of the Union and over 50 foreign countries. Over 7,000 additional students are enrolled at NTSU's sister institution, Texas Woman's University, which was founded, also in Denton, in 1901. Graduate work at the master's level has been offered by NTSU since 1935 and at the doctoral level since 1950. An academic center is maintained by NTSU in Dallas, and medical school facilities are located in Fort Worth. The Denton campus, with its extensive grounds and physical plant, combines advantages of life in a university town with ready access to the greater Dallas–Fort Worth metroplex.

The tradition of education for librarianship dates from the mid-1920s, when the first courses in the field were developed and offered by the Librarian, Mrs. Pearl C. McCracken. This early instruction was focused on the practical use of books and libraries and on library organization, methods, and administration. Extensive practicum experience was provided in all phases of library operations and activities. Only a limited number of students were permitted to register, with preference being given to those interested in preparing for college library positions.

Mrs. McCracken continued to offer these first courses in librarianship from 1925 until the early 1930s, when her administrative duties became prohibitive. However, new courses were developed and offered from the mid-1930s under the leadership of Mrs. Lady Kate Medders, who had previously served with the library reference staff and the English faculty. Twenty-three students were enrolled in the 1935/36 summer term, when four courses were offered by Mrs. Medders and Miss Beatrice Holt, a visiting instructor from the School of Librarianship at the University of Denver: Library Administration, Bibliography and Reference, Classification and Cataloging, and Book Selection. By 1939 sufficient progress had been made for the formal inauguration of degree programs at the baccalaureate and postbaccalaureate levels and for the establishment of a separate Department of Library Service within the College of Arts and Sciences. Upon the retirement of Mrs. McCracken in the same year, Dr. William Stanley Hoole was appointed to the combined posts of librarian and director of the new department of Library Service.

The 4-year undergraduate program offered at this time led to the A.B. or B.S. degree with a 30-semester-hour major in Library Service. An undergraduate minor was also offered for those interested in preparing for teacher–librarian positions.

The postbaccalaureate (fifth-year) program leading to the B.S. in L.S. degree, also with a 30-semester-hour major, was designed for graduates of recognized colleges who wished to prepare for professional library careers. Students wishing to enter the field were expected "to cultivate wide reading interests" and to acquire a broad general education background in "the principal departments of learning which are commonly known to make for a well-balanced education." A working knowledge of at least one foreign language was required, together with formal field work "in a library of recognized standing." The aims of the department were to prepare qualified students for career positions in libraries, to train school librarians and teacher–librarians, and to acquaint students with books and libraries "as a means of self-education and as a basis for culture."

During the 1940s, as the curriculum expanded, the department enjoyed a steady growth in enrollment and emerged as the principal supplier of librarians throughout the state. Other formal programs for preparing librarians were then offered only by Texas Woman's University in Denton and by Our Lady of the Lake College in San Antonio. Degree programs in librarianship were not begun at the University of Texas in Austin until 1948.

Succeeding Dr. Hoole, Dr. Arthur M. Sampley was appointed director of libraries and director of the Department of Library Service in 1944 and continued in this dual capacity until his appointment as dean of the College of Arts and Sciences in 1953. During these same years, Mrs. Medders continued as a guiding spirit for faculty and students alike, and she remained active with the department until her retirement in 1953. In the latter year, Dr. David A. Webb was named director of libraries and director of the department.

At this time, the curriculum of the department included courses in the Use of Books and Library Materials, Bookbinding, Cataloging and Classification, Book Selection, the Elementary School Library, the High School Library, Bookmaking and Book Buying, Special Library (nonbook) Materials, Books and Related Materials for Children, Books and Related Materials for Young People, Basic Reference, Advanced Reference, Practice Work in School Libraries, Library and School Integration, Music Libraries, Recreational Reading, Special Libraries, and Academic Library Administration. Shortly after, new courses were added in Advanced Cataloging and in Library Organization and Operation.

Under Dr. Webb, the postbaccalaureate program was increasingly emphasized as the basic preparation for professional librarianship, and a new Master of Library Science degree was formally requested in 1960 and finally instituted in 1963, superseding the former fifth-year B.S. in L.S. degree dating from 1939. This change had been projected earlier but was delayed for various reasons, including a moratorium observed by the state in the 1950s on new graduate programs prior to the establishment of the Texas Commission on Higher Education. Dr. Webb subsequently guided the department through the further expansion of the curriculum and through the review and accreditation of the master's program by the American Library Association at the close of 1966.

In 1967 Dr. Webb relinquished his position as director of the department to devote full time to his duties as director of libraries. He was succeeded in the former position by Dr. C. Glenn Sparks. Under Dr. Sparks and coincident with the establishment of the Federation of North Texas Area Universities, further progress was made with the introduction of the post-master's Certificate of Advanced Study in 1968 and the authorization of the Doctor of Philosophy degree in 1969. The latter program was instituted in 1970 in formal cooperation with the School of Library Science at Texas Woman's University. The curriculum was accordingly again expanded, and the Department of Library Service was also reorganized and separately established as the present School of Library and Information Sciences under Dr. Sparks as dean. The mission of the school was simultaneously redefined to focus upon graduate professional programs, and the undergraduate major was discontinued after 1970. Dr. Dewey E. Carroll succeeded Dr. Sparks as dean of the school in January 1973.

The school's quarters and facilities, newly expanded and modernized during 1974–75 to rank with the best in the country, are centrally located on the Denton campus in the Information Sciences Building. Also housed in this building are the University Computer Center and the University Science Library, which provide exceptional resources close at hand for students. Adjacent to the school on the central campus mall is the University Union building, which is a major focus of campus life and student activities. The school's professional library, with its separate staff, has collections in the field of librarianship and information science numbering over 40,000 items. The nearby main university library has collections totaling over 1 million printed books, documents, and microform volumes as well as many thousand items in nonbook formats. Approximately 50,000 volumes are added annually. The music collection is one of the largest in the country. The university library is a member of the computer-based OCLC network, and terminal access is provided for some 25 other computerized bibliographic data bases.

The general goals of the school are to prepare qualified men and women for career positions at beginning and advanced levels, to promote the advancement of professional knowledge and practice, and to serve both public and professional interests in librarianship and information service. The formal programs of the school lead to the Master of Library Science degree, the Doctor of Philosophy degree, and the Certificate of Advanced Study. Special certifications in school librarianship and in medical librarianship are also available. Those not wishing to pursue degree programs may enroll in nondegree status for individual courses as well as for special workshops, seminars, and institutes which are offered from time to time to meet special continuing education needs. Complementing the formal offerings of the school are various professional conferences and events which are conducted on occasion by libraries and professional groups in the greater metropolitan area. The school provides placement and career counseling services for all students and graduates. The association of Graduate Students in Library and Information Sciences provides an organizational focus for student social functions, professional development activities, and participation in school and university affairs. Alumni activities are sponsored by the Alumni Society, which also administers the Lady Kate Medders Endowment Fund. The school's traditional honor society, Alpha Lambda Sigma, serves to encourage scholarship and to recognize achievements of students and alumni.

During the years since the first degrees in librarianship were awarded at North Texas in 1940/41, more than 1,300 students have completed degree major programs, and several hundred others have taken courses and completed special certificate programs to prepare for library work. Since 1964 some 600 students have earned the Master of Library Science degree. Approximately 90 students are now graduated from this program each year.

A final aspect of the school to be noted is the special relation which obtains with the neighboring School of Library Science at Texas Woman's University. The faculties of the two schools have worked together for years in a common endeavor, and they have been formally linked since 1969 in the joint administration of the doctoral degree program. Master's as well as doctoral students may earn resident degree credit by completing course work on either campus. The range of resources, faculty competencies, and course offerings made available to students is thus significantly enlarged.

D. E. Carroll

NORTHWESTERN UNIVERSITY LIBRARIES

Northwestern University (NU) is located on two separate lakefront campuses. The larger campus has 146 buildings on 169 acres along a mile of Lake Michigan shoreline in the north suburban city of Evanston. The Chicago campus, 12 miles south, occupies a 14-acre site just north of the downtown center of Chicago. Its buildings house the Medical, Dental, and Law Schools; part of the Graduate School of Management; and the Evening Divisions. Several member hospitals of the McGraw Medical Center of Northwestern University are on or adjacent to the Chicago campus.

Although the university's trustees, from the first, intended that Northwestern should be a university with a full complement of colleges, rather than simply a college of liberal arts, this development came about slowly. The school which began classes in Evanston in 1855 was in fact a college of liberal arts. A Preparatory School was added in 1856; and a College of Technology existed from 1873 to 1877, the same year the university merged with the Evanston College for Ladies. The Cumnock School of Oratory, later the School of Speech, became part of the university in 1878, and the School of Music in 1895. In 1907 the School of Engineering was established, followed by the Graduate School in 1910, the Summer School in 1914, the Medill School of Journalism in 1921, the School of Education in 1926, and the Technological Institute, replacing the School of Engineering, in 1940.

The development of what later became the Chicago campus began in 1870 when the university affiliated with the Chicago Medical College, followed shortly by affiliation in 1873 with the Union College of Law. The university included a College of Pharmacy from 1886 to 1917 and a Woman's Medical College from 1896 until 1902. The School of Commerce, predecessor of the present Graduate School of Management, was established in 1908; and the University College, which later became the Evening Division, was added in 1933.

The university maintains an extensive library system to support its programs in study and research. This system includes the main Northwestern University Library, eight branch and special libraries on the Evanston campus, and four libraries on the Chicago campus. The holdings of all the libraries total 2,500,000.

The main Northwestern University Library building on the Evanston campus, completed in 1970, provides excellent work-study facilities. The three towers of this building, together with the adjoining Charles Deering Library, built in 1932 and renovated in 1972, contain all of the Evanston undergraduate and graduate collections in the humanities, history, and social sciences.

Two branch libraries, the Transportation Center Library and the Management Library, are housed in the Charles Deering Library.

Located outside the main building complex are the Astronomy, Biology, Geology, Mathematics, and Music branch libraries, and a science–engineering library in the Technological Institute. Plans are underway for a new Science–Engineering Library which will merge the collections in Astronomy, Biology, Geology, and the Technological Institute Library.

Of the four separate libraries on the Chicago campus, the three which serve the professional schools—the Archibald Church Medical Library, the Dental School Library, and the Law School Library—are independent of the university librarian's jurisdiction. The Joseph Schaffner Library, which serves the Evening Divisions and the evening program of the Graduate School of Management, is a part of the main university library system.

The Beginning

Northwestern University was founded in 1850 in Chicago when nine idealistic young men dedicated themselves to building a Christian university that would serve the educational needs of the old Northwestern Territory. After having been granted a university charter from the State of Illinois on January 28, 1851, the founders raised money to finance the institution and purchased a 379-acre farm, then mostly swamp and wilderness, 12 miles north of Chicago on the shore of Lake Michigan in the township of Ridgeville. A small village, which as late as 1860 had a population of only 831, grew up around the university and was named for university founder John Evans. The Chicago and Milwaukee Railroad connecting Chicago and Waukegan ran its first train through the village of Evanston in the summer of 1855.

In 1855 a three-story frame structure, later known as Old College, was erected on Davis Street. The building, 50 feet wide and 40 feet deep, was topped by attic and belfry and provided space for most of the university's needs—six classrooms, offices, a chapel, a museum, rooms for two debating societies, and three attic rooms for students who reimbursed the university for their lodging by ringing the college bell. The first classes, held on November 5, 1855, with four of the 10 students enrolled present, were conducted by a faculty of two men, Henry S. Noyes, professor of mathematics, and William D. Godman, professor of Greek language and literature.

On June 26, 1856, the Board of Trustees met in Old College and, as part of their regular business, appointed a Committee on Library, consisting of three of its members, Nathan S. Davis, Orrington Lunt, and Grant Goodrich. The committee's two recommendations reflect the idealism and commitment of the founders. The first was that $1,000 be spent for the purchase of books and "the commencement of a library" and the second that this amount be expended for library needs annually. At a subsequent meeting of the trustees on July 21 of the same year, the newly elected president, the Reverend Randolph Sinks Foster, was granted his request to continue to serve as pastor of Trinity Church in New York until May 1857. The board also agreed that the salary of $2,000 which would have ordinarily been paid him be instead allocated to the library.

At the first faculty meeting on September 16, 1856, the entire faculty—consisting of two, Henry S. Noyes and William D. Godman—met with newly elected President Foster and agreed, in his absence, to divide the various administrative duties between them: Noyes agreed to administer student discipline and act as university treasurer, and Professor Godman agreed to be secretary and librarian, thus setting a precedent of faculty administration of the library which would last until 1876. Since that day 16 men and women have had charge of the library:

William D. Godman, librarian, 1856–1858
Daniel Bonbright, librarian, 1858–1865
Louis Kistler, librarian, 1865–1869
David Hamilton Wheeler, librarian, 1869–1873
Charles William Pearson, librarian, 1873–1875
William Haven Daniels, librarian, 1875–1876
Horace Gray Lunt, librarian, 1876–1886
George E. Wire, assistant librarian, 1887–1888
Lodilla Ambrose, assistant librarian, 1888–1908
Walter Lichtenstein, university librarian, 1908–1918
Eleanor Worthington Falley, acting university librarian, 1918–1919
Theodore Wesley Koch, university librarian, 1919–1941
Effie A. Keith, acting university librarian, 1941–1944
Jens Nyholm, university librarian, 1944–1968
Thomas R. Buckman, university librarian, 1968–1971
John P. McGowan, university librarian, 1971–

THE LIBRARY IN OLD COLLEGE

William D. Godman was provided with space for the library on December 27, 1856, when the university agent was instructed to "fit up a room in a suitable manner," which he did on the northeast corner of the third floor of Old College (Figure 1). On June 6, 1857, having expended the initial $2,000 appropriation, Godman reported that the library contained 1,977 books, 21 catalogs, and 16 pamphlets. Of these, 33 books were in Greek, 33 in Latin, one in German, and 41 in French. There was no mention of newspaper or periodical holdings. Use of the library was extended to the university's trustees and agents, university and Garrett Biblical Institute faculty, university students, and residents of Evanston. Students paid an annual library fee which provided the library with a small income until the fee was discontinued in 1869 (from 1856 to 1863 the fee was $3.00, after which it was $1.50). Only faculty members were allowed to take books home.

Although the trustees initially had decided to appropriate $1,000 annually for the library, the economic depression which followed the Panic of 1857 made this impossible.

Godman was succeeded as librarian in 1858 by Daniel Bonbright, professor of Latin. Bonbright had a long and distinguished career at the university and the library often benefited from his interest. In the summer of 1869, for example, while studying in Europe, he discovered that the library of Johannes Schulze of the Prussian Ministry of Education was for sale. The collection of 20,000 volumes

FIGURE 1. *"Old College," Northwestern University's first building, where the library was begun in 1856 (University Archives photo).*

included Greek and Latin classics; dissertations in German in philosophy, philology, fine arts, history, and education; and many rare books including 13 incunabula. Upon Bonbright's strong recommendation, University Trustee Luther L. Greenleaf purchased the entire collection for the university for $6,820. The collection itself was considered a first-rate library for a university with only 100 students. In addition, Bonbright was chairman of the faculty Library Committee from its inception in 1876 to 1911.

In 1860 President Foster offered to exchange his personal library of 675 volumes in philosophy and history, complete with a cabinet and valued at $1,050, for university property in Evanston. The offer was accepted.

In 1865 Orrington Lunt, president of the Board of Trustees and a university founder, established a permanent endowment for the university by deeding it 157 acres of Evanston land. Optimistically, the endowment was set aside in 1868 for library use and named the Orrington Lunt Library Fund. However, the financial crisis brought about by the Panic of 1873 forced the trustees to use the endowment for general purposes.

From 1865 to 1869 Louis Kistler, professor of Greek, served as librarian. Under his direction the first library catalog was completed, *The Catalogue of Books in the Library of the Northwestern University, Volume I* (Evanston, Illinois, 1868, 47 pp.). It was produced by Charles Kimball Bannister, class of 1869, the first known student assistant. For the sum of $25, Bannister compiled a relatively rough listing of the 3,000-volume library, combining in one alphabetical sequence both authors and keywords from the titles. The collection, which completely filled the library room, was strong in Latin and Greek classics but included few contemporary writers.

By the spring of 1869 the university had passed through both an economic depression and the Civil War, and financial security appeared assured. Enrollment rose to 109 that year and by decision of the trustees Northwestern became coeducational, signaling the end of an era. Of great interest was a new building scheduled for completion in the fall of 1869, to be called University Hall.

THE LIBRARY IN UNIVERSITY HALL

The new classroom and administration building, University Hall, was constructed of Joliet limestone in Gothic style (Figure 2). Its construction marked a major step forward for the young university.

The three-story building, 70 by 100 feet, also contained a basement and an attic. The basement housed a laboratory and lecture room. The main floor included a large classroom, also used as a chapel, and faculty offices. The second and third floors held additional classrooms and faculty offices, and on the third floor on the north end a large 70-by-20-foot library room. The attic housed the museum and dormitory space.

The library was used primarily by the faculty. Since courses were taught from textbooks, the students who did use the library tended to be members of the three

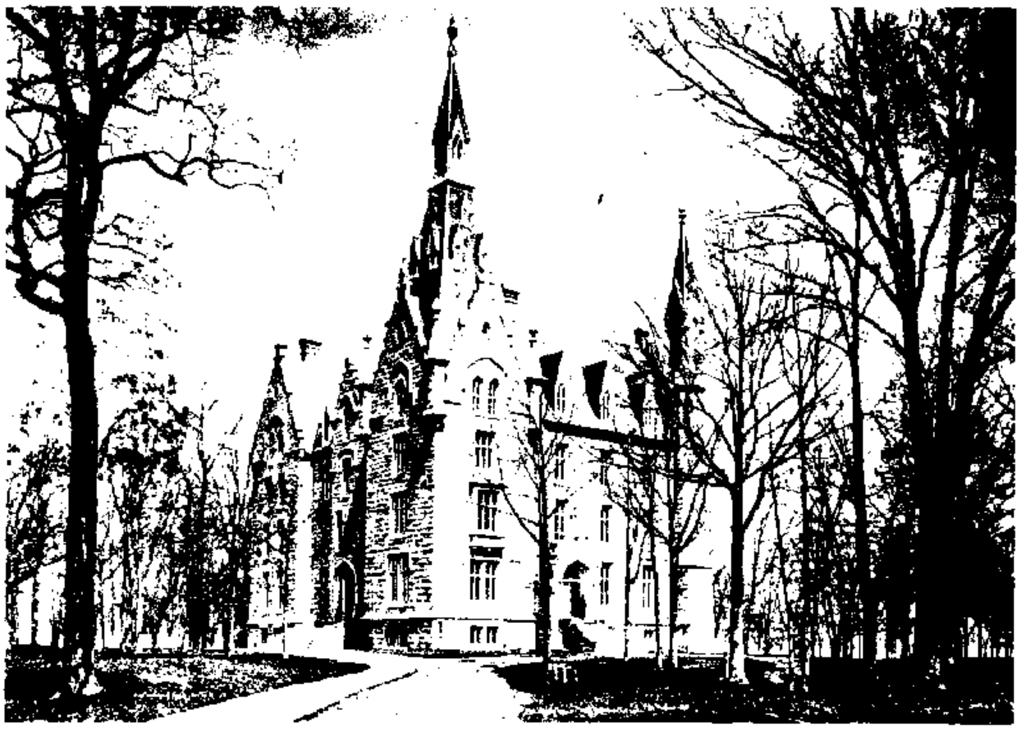


FIGURE 2. *Looking north to University Hall where the library was located from 1869 to 1894 (University Archives photo).*

debating societies: Hinman, founded in 1855; Adelphi in 1860; and the Ossoli Literary Society for women in 1874. These held weekly meetings which were well attended and provided both intellectual and social activity on campus. At this time students did not enjoy library borrowing privileges.

The new librarian, David Hamilton Wheeler, professor of English literature and history, had just served a 2-year term as ad-interim university president. On his very first inspection of the library, December 1, 1869, he found the boxes of books from Old College on the floor still unpacked, since no provisions had been made for shelves in the new library quarters. At the Board of Trustees meeting in March of 1870, the university agent was authorized to have shelving constructed for the library "on all walls of the library room."

The earliest extant photograph of the library (1875) shows floor to ceiling shelves, large tables, chairs for 18 readers, gas light fixtures, two stoves, and a woodbox (Figure 3). The library now had the surprising number of 13 periodicals, eight American and five "foreign"; and 10 newspapers from Evanston, Chicago, New York, Washington, and St. Louis, as well as six religious and five college newspapers. Fifteen of the titles were gifts from publishers and faculty. In July of 1870, the 20,000-volume Schulze library arrived from Germany, and Wheeler, with the help of Bonbright, spent the summer putting it in order. In 1873, the 1,500-volume library of Professor Noyes was purchased for $1,250,

FIGURE 3. *The library in University Hall, 1875 (University Archives photo).*

perhaps not so much because of the value of the collection itself but to provide for the widow of a cherished colleague; Mrs. Noyes was paid 8% of the library's value per annum for her lifetime. The addition of the Noyes collection filled the balance of the library's shelving.

On May 26, 1876, Senator John A. Logan arranged to have the library designated as a depository for U.S. government publications, a status which proved to be of immeasurable benefit to the library during the ensuing years.

In 1878, 800 volumes on business and politics were purchased from the widow of Oliver A. Willard, brother of Frances Willard, by Trustees Lyman Gage and William Deering and donated to the library.

In 1873 Wheeler resigned and was replaced by Charles William Pearson, instructor in German. Pearson was succeeded in 1875 by W. H. Daniels, a Methodist minister and instructor of Biblical literature and the last faculty member to serve as librarian. In 1876 Horace Gray Lunt, son of university founder and library benefactor Orrington Lunt, was named librarian. For the next 10 years Lunt was listed in the university *Catalogue* as librarian. Lunt had studied law, been admitted to the bar in 1873, and maintained a law office in Chicago. While he donated his services to the library, it seems that because of the demands of his law practice, he was compelled to serve nominally as librarian save for the submission of an occasional report to the president. During Lunt's tenure, the day-to-day functions of the library appear to have been carried out by a succession of student "librarians" directed by Dr. Bonbright and the Library Committee. In 1886 Lunt resigned in order to move for reasons of health to Colorado Springs, where he later became a prominent judge.

Keeping the University Hall library open had always been a problem for the faculty-librarians, and from the beginning they had appointed older students as "assistant librarians" in order to cover the hours that they could not be present. For $100 the student was expected to keep the library open weekdays from 1:00 to 5:00 P.M. throughout the school year, guard the collection, and tend the fire. A sharp student protest excoriating the practice of short hours and seemingly perpetual absence of the faculty-librarian was published in the campus newspaper *The Tripod* on November 19, 1874. Student home loans apparently were not permitted until 1876, and then were limited to only 1 week. Overdue fines were set at $.02 a day and the first fine was collected on January 15, 1878.

Three of the student assistants from this period, James Taft Hatfield, ('83), George E. Wire ('83), and Lodilla Ambrose ('87), later achieved prominence in their professions. Hatfield, assistant for the 1882–83 school year, had earlier published a description of the Schulze collection in the *Tripod* called "Some Old Books in Our Library," which caught the attention of the librarian and won him the assistant's job. After graduating, Hatfield earned a Ph.D. at Johns Hopkins and taught at various universities and colleges, returning in 1890 to Northwestern as professor of German. He enlisted in the Navy during the Spanish–American War, rose to the rank of captain, and returned to the university where he served for 44 years as chairman of the German Department, succeeding Bonbright as chairman of the Library Committee in 1911.

The decades of change following the Civil War had a significant impact upon the philosophy of education. Gradually, the traditionally rigid curriculum, dominated by the Greek and Latin classics, was revised. Beginning in 1883, the number of required Latin and Greek courses was lowered and electives in history, science, and German were added. For the first time, students could work for special honors in a field of their choice.

These changes had an effect on what was expected of the library by both faculty and students and there was even more pressure to keep the library open longer. Accordingly, in 1883 all faculty were issued keys to the library, and in the fall of 1885 a full-time librarian was finally hired.

George E. Wire was the first librarian to be employed, at a yearly salary of $300. The library was open from 9:00 A.M. to 12, and 2:00 to 4:00 P.M., Monday through Friday, and from 9:00 to 12 on Saturday. During vacations it was open at least once or twice a week. Wire resigned in December 1887 and enrolled in the Columbia College Library School. Subsequently, he was librarian of Newberry Library's Medical Department from 1890 to 1895, cataloged the collection of the Northwestern Medical School Library from 1895 to 1898, and spent the rest of his career as librarian of the Worcester County Law Library in Massachusetts.

Lodilla Ambrose, who replaced Wire, began work January 1, 1888, and was to be in charge for 19 years. The following year the faculty formalized Ambrose's appointment as "assistant librarian" and voted to discontinue the practice of naming a faculty member as librarian.

Ambrose graduated from Northwestern with an A.B. in 1887 and was granted a Master's of Philosophy by the university in 1888 in recognition of self-advancement. In 1893 the university Phi Beta Kappa chapter retroactively elected her to membership. Although she had no formal library training, she was well informed in modern library procedures, which she implemented during her tenure. She held memberships in the American Library Association and the Chicago Library Club, where she served as treasurer in 1893.

Throughout her administration, Ambrose submitted annual reports to the president although the Library Committee controlled the departmental book funds and made the major decisions.

In 1888 the library consisted of three rooms, the main reading room and two adjoining rooms which had been acquired in 1882, named "Latin and Greek" and "French and German." The collection had grown from 3,500 in 1869 to 26,000 volumes and 8,000 government publications in 1888. The library's seating capacity was limited to 50, while the Evanston enrollment had risen to 500. Evening hours were instituted in 1891 as a result of a student petition and Ambrose reported that "there has been a steady and appreciative use of the library . . . that justifies the extension of the time."

Henry Wade Rogers, inaugurated as university president in 1890, recognizing the library's pressing needs, appealed to the trustees for funds for a new building. In 1891 Orrington Lunt offered $50,000 for a new building on condition that the university provide an equal amount. Shortly thereafter, Mrs. Robert M. Hatfield donated $5,000 in memory of her husband, an additional $10,000 was received in small amounts from other friends of the university, and the trustees provided the balance from general funds, thus assuring construction of the much-needed building.

THE ORRINGTON LUNT LIBRARY

The Orrington Lunt Library, designed like most libraries to last for all time, was prominently placed facing Sheridan Road at a slight angle. The wooden building, faced with buff Bedford limestone and roofed with red Conosera tile, was an adaptation of a popular Italian Renaissance style designed by Chicago architect William A. Otis (Figure 4). The structure, measuring 73 by 162 feet, consisted of three sections: a main central square section of three stories fronted with a semicircular portico supported by Ionic columns, and two attached wings, each two stories high. The main floor contained a reading room, book stack, librarian's office, and a room for the catalogers. The basement had a room housing government publications, work rooms, and seminar rooms. The second floor, reached by an open, carved oak staircase, included an assembly room with seating for the entire student body of 500, "art" rooms, and classrooms. The third story of the central portion was occupied by the University Guild, an association of faculty wives,

FIGURE 4. *The Orrington Lunt Library was the main library from 1894 to 1932 (University Archives photo).*

alumnae, and friends of the university. Fitted with gas fixtures, electricity, and candle sconces, the building was heated with steam. Thoroughly modern additions included a book lift and a speaking tube which connected the floors. Friezes by Ida Burgess, noted for her exhibits at the 1893 Columbian Exposition, decorated the library and Guild room. The *North Shore News* reported on October 5, 1894, that "the interior of the building is calculated to draw the admiration of all visiting librarians . . . its convenience is not surpassed by any library in the country," and that it was "one of the finest, if not the finest college library in the West."

Two impressive dedication ceremonies were held September 26, 1894. In the afternoon numerous speeches and invocations echoed through the building's assembly room. Because of an overflow audience, students were barred from the ceremony—although, as the *Tripod* pointed out, ironically enough, donor Orrington Lunt's speech was addressed to them. That evening, President Henry Wade Rogers presided at yet another convocation at the First Methodist Church. Dr. Justin Winsor, librarian of Harvard University, gave the principal address, a 6,000-word discussion of the relation of modern libraries to advanced scholarship, later printed in its entirety in the November issue of the *Library Journal*. President Charles Kendall Adams of the University of Wisconsin and President Franklin W. Fisk of the Chicago Theological Seminary also participated in the ceremonies, which closed with an enthusiastic rendering of Handel's "Hallelujah Chorus."

The following day the Orrington Lunt Library officially opened its doors. It would serve as the main library on the Evanston campus for the next 38 years.

Lunt had reading-room space for 120, more than double that which had been available in University Hall, and adequate shelving for the collection of 29,000 volumes and 19,000 government publications. The reading-room shelves held a reference collection of 500 volumes, 900 volumes of heavily used periodicals, and 600 books on reserve for classes. The library received 180 periodicals and newspapers, circulation stood at 7,500, and annual accessions totaled 2,000, 1,000 of which were government publications.

For the first 4 years Ambrose, the only salaried staff member, maintained a 44-hour weekly schedule, assisted by one paid student employee 2 hours a day and a small amount of additional assistance from student volunteers who, unfortunately, always seemed to disappear just when they were most needed, Ambrose complained.

The staff gradually increased, adding a first assistant in 1898, and a reading-room assistant in 1901. By 1908 the staff totaled eight (Figure 5). The student population grew from 500 to 2,900. Hours when the library was open increased to 66 per week in 1901.

Ambrose was the first librarian to purchase books selectively in anticipation of curriculum needs, the first to provide reference service, and the first to start classifying the collection. Among her other innovations were the ultilization of the

FIGURE 5. *Librarian Lodilla Ambrose (seated, center) with staff of the Orrington Lunt Library, January 27, 1904 (University Archives photo).*

typewriter, Library of Congress catalog cards, and a standardized statistical records-keeping procedure. By 1902 the library was organized in five departments—Executive and Order, Circulating, Reference, Catalog, and Shelf. In 1904 Ambrose had a telephone installed. By 1907 Ambrose had organized monthly staff meetings and introduced participatory management techniques.

It is of interest that Ambrose initiated a relation between the library and the Northwestern Bindery, a small enterprise in Evanston, which lasted for 43 years until owner George Stosskoph retired. After Stosskoph sold his business to Ernest Hertzberg, he did volunteer work in the university library until his death at the age of 81 in 1955.

Gifts were small by present-day standards: for example, two of the largest were a 487-volume collection of religion, philosophy, and history donated in 1896 by the widow of the Reverend R. W. Patterson, a local minister; and 2,500 volumes of German literature presented to the library in 1897 by several Chicagoans of German extraction. To encourage additional gifts, Ambrose began the practice of listing every donor in her annual reports to the president.

In 1908, in protest of what she considered an abysmally low salary of $1,200, Ambrose resigned. While it is true that her replacement, a male, was appointed at a salary of $2,000, he was the possessor of a Ph.D.

After leaving Northwestern, Ambrose worked on a New Orleans newspaper and, for 2 years (1912 and 1913), as librarian and curator of the New Orleans School of Tropical Medicine and Hygiene at Tulane University; after which she worked as a free-lance translator and writer until her death in 1927.

Walter Lichtenstein

Upon Ambrose's departure, Dr. Walter Lichtenstein (Ph.D. Harvard, 1907) was appointed university librarian on August 7, 1908. Lichtenstein had been curator of the Hohenzollern Collection of German history at Harvard, earning a reputation as an outstanding bibliographer. Lichtenstein was given an appointment as a professor in the College of Liberal Arts.

Lichtenstein quickly concurred with Ambrose's contention that the Lunt Library had become badly overcrowded and was poorly funded. The collection was weak in many areas. Due to a chronic lack of staff, only 30,000 volumes of the 70,000-volume collection were classified. In 10 years Lichtenstein increased the staff from eight to 15 and cataloged the 40,000-volume arrearage, making it possible to call for the books by number rather than by complete author and title. A shelf list was completed and the first inventory taken (927 volumes were missing). The library benefited from Lichtenstein's reorganization of staff and library procedures, and the reference and bibliographic collections were substantially improved. A union catalog of 1 million cards, predecessor of present library book catalogs, greatly facilitated processing.

A significant administrative change occurred in 1912 when the university statutes were revised so as to detach the library from the control of the College of Liberal

Arts and to constitute it as a library to serve the needs of the College of Engineering and the Schools of Music and Commerce, as well as the Evanston Academy and the College of Liberal Arts.

Moreover, a bridge was established to the libraries of the professional schools on the Chicago campus, in that they were directed to submit their annual reports for inclusion in the *President's Report*. Thus, for the first time it became feasible to assemble data on the combined holdings of all Northwestern's libraries.

The death in 1912 of Daniel Bonbright, who had been chairman of the Library Committee since 1876, ushered in a new era in the administration of library affairs. Until that time the Library Committee had exercised a great deal of control over all aspects of the library's administration and policies; henceforth, its powers were reduced to those of an advisory body. The university librarian now assumed the major responsibility for the purchase of books.

Although Lichtenstein was able to convince the administration of the benefits of a centralized library as opposed to the maintenance of separate departmental libraries, nothing could be done at this time since there was little hope of securing a new building in which the eight departmental libraries could be consolidated. Control over these poorly organized collections remained marginal. By establishing a recurring library book fund account, Lichtenstein was able, from 1909 to 1918, to utilize $30,000 which otherwise would have been lost for library use under the old system. On behalf of the university he went on a book-buying trip to Europe in 1911 and spent 2 years, 1913 to 1915, in South America on a similar mission in cooperation with Harvard University, the John Crerar Library, the John Carter Brown Library, and the American Antiquarian Society. Northwestern's share of the latter purchases appreciably strengthened the collections in South American literature and history.

The need for additional space occupied much of Lichtenstein's time, but the university could neither afford a new building nor extend the old one. However, to alleviate the most pressing space problems, more rooms in Lunt were converted to library use and, in 1917, the collections of Greek and Latin were stored. Although enrollment remained relatively stable, annual library circulation doubled from 45,000 in 1908 to 96,000 in 1918. Students and faculty both complained that often all seats, including space on the stairways, window ledges, and floors were filled. In the course of Lichtenstein's 10 years as librarian the stack collection increased from 75,000 to 116,000 volumes, while the number of government publications grew from 50,000 to 85,000. The library's problems were further increased during World War I when both salaries and book funds were cut and, to conserve fuel, library hours were reduced from 84 to 65 per week.

In 1918 the strong anti-German sentiment manifest throughout the country precipitated the dismissals of several university professors of German nationality as well as those interested in the German language and culture. At Northwestern, Lichtenstein and a member of the German department faculty fell victim to the war-induced hysteria. After his summary dismissal as librarian, Lichtenstein went to work at the First National Bank of Chicago, became an expert on international banking, and eventually became the bank's vice-president. He founded the bank's library. Upon retiring in 1945 he assumed charge of the Financial Institutions Division, under the command of General Lucius Clay, of the U.S. Military Government of Germany. In 1947 he joined the management of the International Harvester Company as a consultant. In 1954 he again retired and moved to Cambridge where he was appointed honorary curator of Harvard University Library, a position he held until his death in 1963 at the age of 83.

Following Lichtenstein's departure, Assistant Librarian Eleanor Falley was appointed acting librarian. Falley had graduated with a B.S. from Northwestern in 1905 and, after taking summer courses at the Library School of the University of Chicago, joined the staff as a cataloger in September. She became assistant librarian in 1913. She served as acting librarian for 1 year, resigning in 1919 to become librarian of Goucher College Library in Baltimore.

Theodore Wesley Koch and the Charles Deering Library

Lichtenstein's successor, Theodore Wesley Koch, was appointed university librarian on September 1, 1919. Koch, with an A.B. from the University of Pennsylvania and an A.B. and A.M. from Harvard, had also studied at the Collège de France at the University of Paris for 2 years. Before coming to Northwestern he was bibliographer of Cornell University Library's Dante Collection, assistant in the Library of Congress Catalog Division, university librarian of University of Michigan at Ann Arbor, and chief of the Library of Congress Order Division. During World War I he was active in establishing the American Library Association's War Service for American servicemen.

Librarian, author, translator, bibliophile, civic leader, Theodore Wesley Koch was a man of charm, wit, and impressive intellect, qualities which won him many friends and wide recognition throughout a distinguished career.

When Koch arrived, the Orrington Lunt Library, built in 1894, had already become totally inadequate. The library had been built to house a collection of 29,000 volumes and 19,000 government publications and for a student body of 500. By 1919 the collection had grown to 120,000 volumes and 90,000 government publications, and the Evanston student population had reached 2,500. Parts of the collection were in storage, in departmental offices or in seminars. The staff of nine, reduced from 15 in 1918, had been demoralized by the abrupt dismissal of Lichtenstein. Book funds were inadequate for the growing university. The collections, weak in many areas, were incapable of supporting faculty research.

Koch gave his attention first to the staff, reorganizing and filling positions with key people, many of whom stayed for long periods, providing stability and continuity. He discovered that Effie A. Keith, head of the Catalog Department, was an intelligent and competent administrator. Koch quickly named her assistant librarian, a post which she capably filled throughout his administration. Eleanor Lewis was an excellent head of Reference from 1919. Wintress Brennan, head of the Order Department from 1929, and Mary Hilton, head of Circulation from

1930, were valued colleagues. In Ruth Jackson, his secretary from 1926, he found faithful support.

In order to relieve the congestion of the Lunt Library, Koch got more space in the building to be released for library use. Every possible niche was filled with books, and additional storage space was requisitioned. In 1924, 10,000 volumes of the School of Commerce Library were moved out of Lunt to the Commerce Building. Still Lunt's floors sagged and the walls cracked with the weight of the books. Outdated wiring constantly threatened fire. Rallying faculty and student support, Koch relentlessly petitioned the administration for a new building.

In 1929, when a bequest from Charles Deering, supplemented with gifts from other members of his family, made a new building a certainty, Koch threw himself enthusiastically into all aspects of the planning, working closely with architect James Gamble Rogers.

Located between the lakefront and a broad meadow fronting Sheridan Road, the Charles Deering Library was built of Lannonstone trimmed with Indiana Bedford limestone in modified Gothic style inspired by King's College, Cambridge (Figure 6). The three-story building, which included a six-level stack tier, cost $1,250,000. The main entrance opened into a lobby lined with exhibit cases. To the left was the Reserve Reading Room and to the right, the Commerce

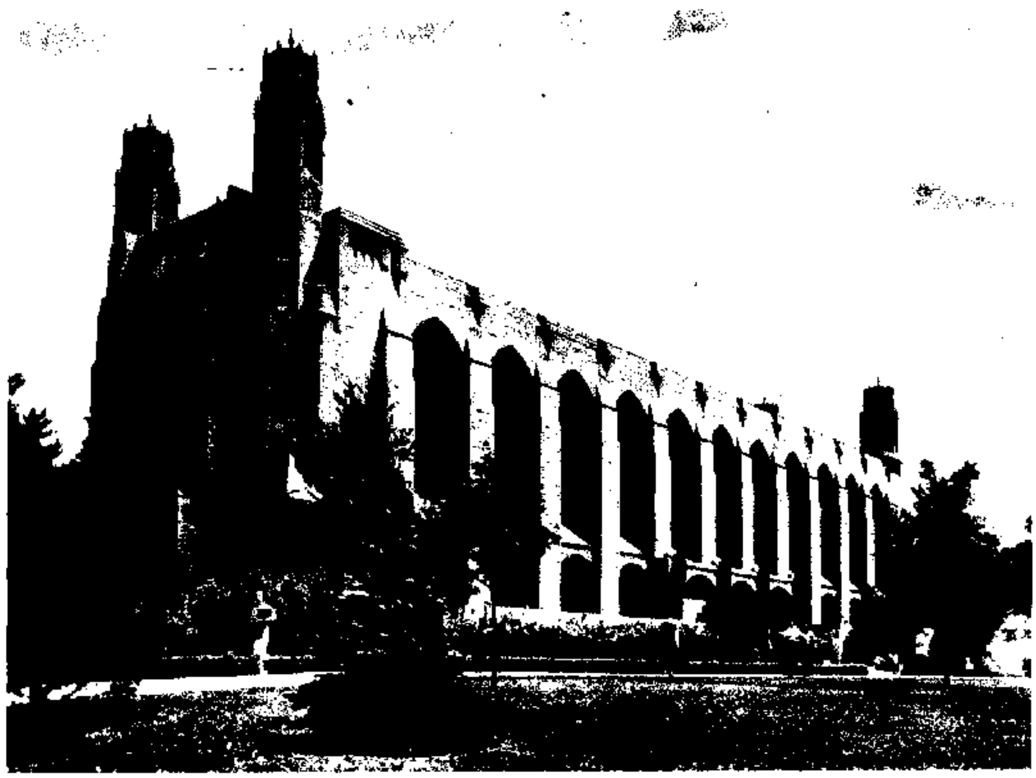


FIGURE 6. *The Charles Deering Library, built in 1932 (University Archives photo).*

FIGURE 7. *Third floor lobby of the Charles Deering Library, 1932 (University Archives photo).*

Library. Stairways to the top floor led to a spacious central room (Figure 7) which provided access to the Main Reading Room, the Periodical Room, the Public Catalog, and the Circulation Desk.

Throughout the library, wood and stone carvings by René P. Chambellan symbolized the world of learning: the owl, the hourglass, the open book, the pen, and many others; as well as the Deering coat of arms, seals of the university and the State of Illinois, and bas-reliefs of University President Scott and Librarian Koch. In the centers of the large windows were colored glass medallions by the artist G. Owen Bonawit depicting several personages including many associated with the history of the old Northwest and figures from literature. Carved, linen-fold oak screens surmounted by life-like birds and beasts separated the lobby from the Main Reading Room and the Periodical Room.

The building incorporated Koch's ideas in many of its features: the separate government publications department, the rare book room, the Browsing Room, research carrels, the book exhibit area, seminar rooms, and efficient book stacks. There was seating for 900 in four large reading rooms, and shelving for 500,000 volumes excluding space for government publications. Although Koch realized the need for a larger building, budget restrictions made that impossible. At the time of the move into Deering the collection totaled 230,000 volumes and 190,000 government publications. Annual accessions grew from 8,500 volumes in 1919 to 16,000 in 1931–32.

The departmental libraries of the social sciences and humanities, which had been cared for by the departmental secretaries and only infrequently monitored by the Circulation Department, were consolidated in Deering. The Commerce Library was moved to Deering's second floor from the Commerce Building, retaining its separate identity.

Because the building promised to be adequate for only a decade, plans for future expansion included an additional six levels of the book stacks or extension of the building to the east; neither option was ever implemented.

In spite of having secured a new building, the remainder of Koch's term was not easy. Always hampered by lack of sufficient book funds, Koch also faced the Depression, which not only forced the university twice to reduce salaries by 10%, but also to cut back the book appropriation from $42,500 to $24,500. To partially offset the reductions in the book fund, Koch turned to friends of the library and to book lovers outside the university. As a result, it was not uncommon during his administration to find that the number of gift volumes often equaled that of volumes purchased. In other ways, too, Koch used book funds with careful stewardship. For example, in 1934, on a trip to London at his own expense, Koch bought many books at Depression prices. Through his efforts the Biblioteca Femina collection of 3,000 volumes, assembled for the International Conclave of Women Writers of the International Congress of Women held in Chicago in 1933, was deposited at Northwestern. The Schwitkis Collection of 9,500 volumes of German literature was a gift in 1938.

In addition he solicited gifts or loans of paintings and busts for the building, and statues, shrubs, and trees for the sunken gardens.

Koch was always deeply involved both in university activities and those of the library profession. A member of several standing university committees, he particularly relished the duties as chairman of the Harris Lecture Committee of Northwestern. Under his leadership in the 1920s and 30s, Evanston audiences enjoyed hearing and meeting men of letters like John Livingston Lowes and J. Middleton Murry, historians like Arnold Toynbee, biologists like Julian Huxley, archaeologists like Sir Rennell Rodd, as well as spokesmen for currents of European thought ranging from Bernard Fäy to Count Carlo Sforza.

In his long tenure at Northwestern from 1919 to 1941, Koch was responsible for many changes and improvements in the quality and operations of the NU Library. In the same period that the Evanston campus student population increased from 3,000 to 5,000 and the faculty from 220 to 330, Koch built the collection from 120,000 to 377,000 volumes. The annual circulation grew from 220,000 in 1931 to 320,000 in 1940.

Koch died on March 23, 1941, at the age of 69; he was to have retired on August 31. Northwestern University President Franklyn B. Snyder led the memorial service and gave the address at the First Congregational Church of Evanston. Koch's ashes were buried in the Forest Hill Cemetery, Ann Arbor, Michigan.

So great was the response from Koch's friends that a substantial memorial book fund was established for rare and finely printed books for the Charles Deering Library. The gardens of the library, carefully planned by him, were renamed the Koch Memorial Gardens.

The Keith Interim

After Koch's death, Effie Keith was appointed acting university librarian. A Simmons graduate, she had also attended the University of Chicago Graduate Library School.

Keith's administration, although brief, was scarcely a caretaker interregnum, due, in part, to the impact of World War II. Four staff members entered the service. The Order Department lost contact with European and Japanese book agents although shipments of German periodicals arrived as late as June 1941. Shipments from England cost more because of war insurance and the Documents Department's accessions markedly increased.

In September 1942 the new Technological Institute was completed and a book collection of 25,000 volumes was established, consolidating the former chemistry, physics, and engineering departmental libraries. The combined Technological Institute Collection was another advance in the long-awaited process of centralizing the library's dispersed holdings.

In another significant development, the 15,000-item personal library of Franz Boas was purchased through the efforts of Professor Melville J. Herskovits, thus marking the beginnings of the library's Africana Collection.

As Keith's short tenure came to a close, the 1943 book appropriation of $56,800 had once again reached the pre-Depression amount.

From 1944 to 1947 Keith served as assistant librarian, and from 1947 to 1949 as a cataloging consultant, under Koch's successor Jens Nyholm. Upon her retirement in 1949, after 30 years at the library, she became assistant librarian of the Seabury–Western Theological Seminary, retiring again in 1967 at age 85.

Jens Nyholm

Jens Nyholm was appointed university librarian on September 1, 1944, a position he was to hold for the next 23 years. A graduate of the University of Copenhagen and the State Library School in his native Denmark, he also held an M.A. from George Washington University, and had served as assistant librarian at the University of California at Berkeley.

Nyholm inherited a library administration replete with confusing and contradictory organizational and jurisdictional procedures and practices. The main library was in fact responsible for the ordering and cataloging of books for all the libraries of the Evanston campus, but this was misleading. Although the revised university statutes of 1912 stated that the libraries of the Colleges of Liberal Arts and Engineering, the Schools of Music and Commerce, and the Evanston Academy should function as a single unit known as the University Library, the lack of an adequate central building, combined with insufficient funding and staff, meant in practice that a number of components of the old departmental library network still survived.

Under the departmental system in effect until 1917, each department's faculty controlled book funds for the department's subject area. This situation placed the university librarians in an uncomfortable position since they hoped to involve faculty in collection building yet at the same time wished to avoid the costly duplication of holdings which the departmental system proliferated. Moreover, control of books in the departmental libraries was unfeasible. Books sent from the main library to the departments after cataloging circulated from the department offices under the aegis of the departmental secretaries. When called for by the main library, the books often could not be located. A strong centralized system was clearly necessary. Although Lichtenstein had been instrumental in effecting a revision of the university statutes, and Koch and Keith had effectively consolidated department libraries in both Deering and the Technological Institute Library, nonetheless Nyholm faced a formidable challenge in centralizing the remainder of the system.

After reviewing the advantages of a strong centralized library system with its economy, efficiency, and improved service, Nyholm successfully won support for his reorganization proposals from University President Franklyn Snyder. In quick succession several libraries were merged with the main library. The 3,000-volume Music Library, begun in 1918, was incorporated in the main system in 1945, and later that year administrative responsibility for the Technological Institute Library was transferred from the dean of the institute to the university librarian. In 1946 the Curriculum Laboratory, established in 1936 by Dr. Samuel Everett of the School of Education, became a part of the library. Also that year a room staffed by library personnel was acquired on the ground floor of University Hall to house the thousands of maps received as a consequence of the war. In 1947 the Botany and Zoology departmental libraries were combined as the Life Sciences Library and moved to Deering. The Mathematics Library in the Lunt Building and the Geology Library in University Hall were designated branch libraries. Nyholm's reorganization left Astronomy as the single departmental library.

A significant internal reorganization was also implemented under Nyholm. The library's technical operations were centralized in 1947 under a chief of technical processes responsible for the administration of the Order, Gifts and Exchanges, Serials, Cataloging, Catalog Maintenance, and Mechanical Processes divisions. A science librarian was appointed to administer the branch libraries in the sciences and the Map Library.

A curator of special collections was appointed in 1949 to head the department of rare books, then called the Treasure Room.

A position of chief of reference and special services was created in 1950 bringing the Commerce, Curriculum, Documents, and Music collections; and the Browsing Room, Periodicals, and the Treasure Room together under one administrative officer.

Later in the year the Circulation Department was assigned responsibility for administering the remaining departmental libraries. Largely for reasons of economy, a transition from closed to open stacks also occurred.

Through building the collections, Nyholm exhibited his considerable knowledge of books and curriculum needs. Several major collections were acquired en bloc including a 6,000-item collection on economic history and 3,500 English and American plays in 1945, and comprehensive Danish and Greek World War II underground collections in 1946. Eight thousand five hundred Spanish plays and a 900-volume Boswell and Johnson collection were added in 1947, a 2,400-volume collection on the expansion and development of the West was purchased in 1949, and a political science collection of 7,200 items and the valuable N. F. S. Grundtvig collection of 200 volumes were acquired in 1952. In 1954 a collection of 7,300 pamphlets and tracts and 150 manuscripts written during the French Revolution was accessioned. The Horace Collection encompassing 1,800 volumes, 5,000 volumes of Western Americana, and the Lew Sarrett Collection of manuscripts, photographs, and memorabilia were acquired in 1956. A 1954 decision to actively collect in the areas of Expressionism, Dadaism, Futurism, Imagism, Symbolism, Cubism, and Surrealism led to the development of a significant collection relating to 20th-century movements.

From the first, Nyholm was necessarily concerned with space requirements. His first annual report noted that the Deering Library's stacks were 90% filled. As early as 1947, pressing space problems necessitated extensive weeding and transfers to branches. In 1952 additional storage space for 26,000 volumes was obtained in basements of nearby classroom buildings, and in 1956 the library secured the use of an underground storage space, the "Annex," which provided room for over 500,000 volumes by 1969.

Eventually the main building became so crowded that in 1964 the Catalog Department reported that there was no space for the addition of a single new staff member. By 1965 the rare book collection was using the Browsing Room for stack space.

Working in cooperation with the other university librarians, Nyholm played a key role in 1946 in the creation of a Library Council comprised of the university librarian and the librarians of the four libraries on the Chicago campus. The initiation of a weekly news bulletin, the *Northwestern Library News* in September of 1946, which carried brief articles about library activities on both campuses, did much to improve communication. In 1949 Nyholm secured an institutional membership in the Library of International Relations, which provided faculty and students with access to an extensive collection near the Chicago campus. That same year Northwestern became one of the 10 charter members of the Midwest Inter-Library Cooperative, later the Center for Research Libraries, established in order to maintain a cooperative storage and service center for less frequently used research materials. Over the years, in order to alleviate the overcrowded condition of the stacks, the library transferred literally tons of material to the center.

In 1950 the combined holdings of the Northwestern University libraries on the

Evanston and Chicago campuses passed the 1 million mark and a ceremony marking the acquisition of the one-millionth volume was held July 26. Ironically, inflation in the early 1950s made growth impossible, since the budget remained stationary.

Other advances during Nyholm's administration included the extension of the faculty TIAA retirement to a number of the professional library staff and the installation in 1952 of a teletype connecting all Midwest Inter-Library Cooperative members. A minor change in the administrative structure occurred in the fall of 1958, when a Geology Library was established in the department's building, Locy Hall, and the geography volumes moved to Deering. Annual increases in the late 1950s and the early 1960s in the book fund helped the library keep up with the inflationary trend.

In 1959 the University Archives became an integral part of the NU Library, forming a unit of Reference and Special Services. The University Archives had been established in 1935 through the efforts of Professor James Alton James, a member of the faculty from 1897 to 1935. Assigned to write a definitive university history, he found that required source materials were not readily available and he therefore proposed to University President Walter Dill Scott that a room be set aside in Deering to be known as the University Archives, where all the material about the development of the university could be gathered. A faculty committee on archives and history was appointed July 2, 1935, and Professor James, as chairman of the committee, served as de facto archivist, assisted by Florence Stewart, formerly the secretary-registrar of the Graduate School. When James relinquished his position, Stewart continued to direct the archives.

In 1961 the last departmental library, the Astronomy Library, was designated a branch. Although it was the last to be incorporated into the system, it is one of the oldest branches, tracing its origin to a collection begun shortly after the Chicago Astronomical Society built the Dearborn Observatory in Chicago in 1865. In 1888, when Northwestern purchased the telescope from the Chicago Astronomical Society and moved it to the Evanston campus, it also acquired the library. The handwritten *Catalogue* dated February 28, 1885, shows that the collection of 1,300 volumes was a general library containing books on all subjects—not only the sciences.

In 1966 Nyholm created the position of associate librarian with responsibility for automating library functions, and a Library Automation Pilot Project was initiated at the Technological Institute Library.

In 1960 the university Committee for an Expanded Library, consisting of faculty members and librarians, recommended that a new university library be built.

The Library Planning and Building Committee was appointed by President J. Roscoe Miller in 1961. Its membership included Professor Moody E. Prior, dean of the Graduate School; Professor Richard Ellmann of the English Department; Professor Robert Strotz of the Economics Department; Jens Nyholm, university librarian; David Jolly, assistant university librarian; John C. Sanderson, Jr., director of plant properties; and Professor Clarence L. Ver Steeg of the History Department as chairman.

From extensive interviews with faculty and students in every department and school came the basic concepts and goals which the committee sought to include in the new library; for example, all the library resources and services should be open to undergraduates, graduates, and faculty alike in one community of scholars. Recommendations were also made that set standards and criteria for the transition from the physical environment of the present campus to the new campus which was being created. The committee's report, submitted to President Miller in 1962, was adopted. By January 1964 preliminary plans and drawings were developed and the following year the final drawings were approved. Groundbreaking took place August 9, 1966.

Throughout the long planning period the committee worked closely with the architect, Walter S. Netsch, Jr., general partner of the Chicago office of Skidmore, Owings and Merrill.

Nyholm spent the last years of his administration largely occupied with planning the new library. At the same time more and more volumes had to be placed in storage. But in 1968, at the close of his 23rd year as librarian, Nyholm could look back on many major accomplishments: the combined libraries of Northwestern had during those 23 years grown from 736,000 volumes to 1,196,000; a staff of 60 had expanded to 170; and the budget increased from $200,000 to $2,000,000. The Evanston campus libraries operations were transformed into an efficient, centralized, and well-coordinated system. The collections increased in quality as well as quantity, due in large part to Nyholm's manifest interest in book collecting.

Since retiring from Northwestern, Nyholm has served as bibliographical consultant for the University of California at Santa Barbara.

Thomas R. Buckman

Thomas R. Buckman succeeded Nyholm in September 1968. Buckman came to Northwestern from the University of Kansas, where he had been director of libraries since 1961. Buckman holds a B.A. from the University of the Pacific, and M.A. and B.S.L.S. degrees from the University of Minnesota.

Buckman's short but eventful tenure was taken up with staff reorganization, the completion of plans for the new building, and the move into the new building.

Buckman's concept of organization, under which the library system is organized today, is a division of library activities among assistant university librarians, who report to the university librarian. To achieve this, he appointed an assistant university librarian for collection development in 1968; and in 1969, assistant university librarians for public services and technical services, as well as a budget and planning officer.

In 1971 the position of assistant university librarian was created to include the duties of the budget and planning officer.

In order to more fully develop staff potential, Buckman organized the Assembly of Librarians, a professional staff forum for the discussion of library problems and grievances as well as intellectual stimulation. An annual performance review procedure and a continuing appointment system were also implemented under Buckman.

Most significantly, Buckman presided over the opening of the Northwestern University Library, completed in 1970 at a cost of $12,321,906, or $31.00 per square foot, with 330,000 square feet of assignable space (Figure 8).

The building received major funding from several sources. Frank C. Englehart, for whom the north tower is named, gave $2,500,000 toward the building and $1,600,000 for its maintenance. Grover M. Hermann, Sr., Shirley Hermann, and Robert Hermann gave $2,500,000 for the east tower, which is named the Grover M. Hermann, Jr., Tower. In recognition of a gift of $2,500,000 from members of the Deering–McCormick family, the south tower was named Deering Tower. The plaza, dedicated May 10, 1971, bears the name of Kenneth Burgess in recognition of a gift of $125,000 from the family. Among others, the International Harvester Company presented a gift of $300,000, and $3,200,000 came from the federal government under Title I and Title II. Among additional donors were Julius J. Abler and the Inland Steel–Ryerson Foundation. The main entrance to the library, the Lantern Entrance, named for its shape, was a gift from the A. T. McIntosh Company.

The mammoth task of moving into the new building involved transferring and merging three major collections from Deering's stacks, underground storage, and the Business Library from level two of Deering. Although a few collections were

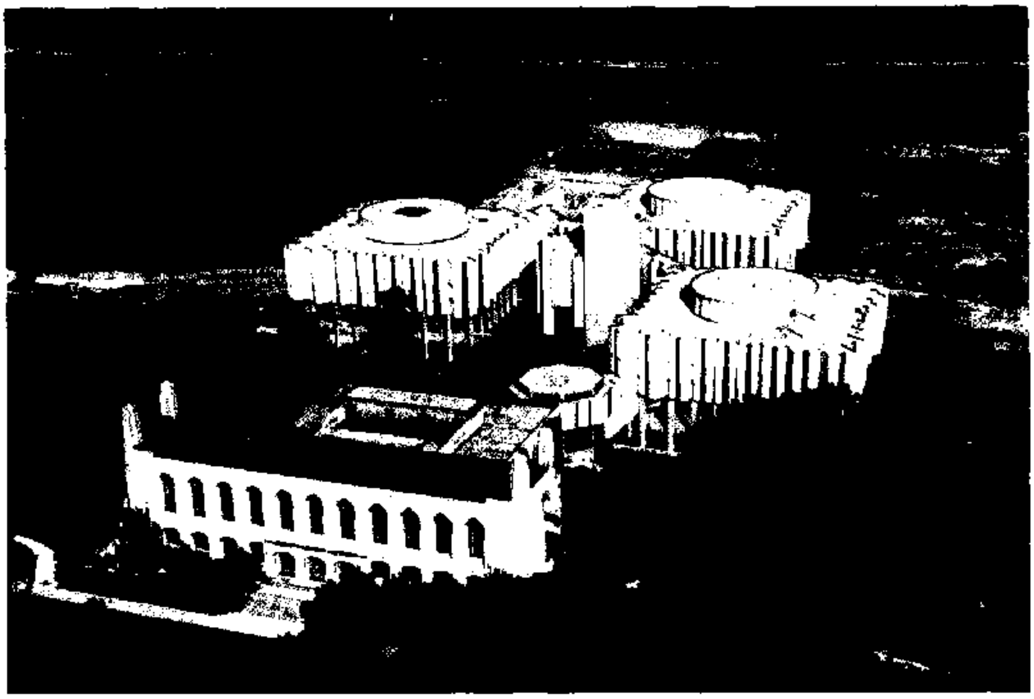


FIGURE 8. *An aerial view of the Charles Deering Library and the new main university library on the new land fill, 1970 (University Archives photo).*

moved without disruption of service on December 1, the major parts of the move occurred between December 18 and January 19, 1970. The library closed, circulation of books ceased, and all library services were suspended. The Map Library was moved from University Hall into new quarters in the lower level of the new building, and every collection in Deering was relocated in expanded quarters. Some name changes of departments occurred concurrent with the move. The Rare Book Room became Special Collections, and Documents became Government Publications. The term "collection" was used to indicate a "department," and "library" indicated a "branch."

The dedication of the new NU Library took place on the Library Plaza on the afternoon of October 21, 1970. A short "Dedication Concert" by the University Symphonic Wind Ensemble conducted by John P. Paynter was followed by speeches from University Chancellor Dr. J. Roscoe Miller, the Chairman of the Library and Planning Committee Dr. Clarence Ver Steeg, University Librarian Thomas Buckman, Architect Walter A. Netsch, University President Robert H. Strotz, and the President of Associated Student Government Eva L. Jefferson. The principal speaker, Newton N. Minow, urged a rededication to the purpose of a university, "the search for truth and its communication to succeeding generations."

At a program held that evening at the Orrington Hotel, the principal speaker, Gordon N. Ray, president of the John Simon Guggenheim Memorial Foundation, spoke on "The Idea of Disinterestedness in the University."

Another dedication ceremony had been held the day before. The Melville J. Herskovits Library of African Studies was formally opened on October 20. In naming the Africana collection for Professor Herskovits (1895–1963), the library recognized his invaluable contributions to the initiation and development of the collection. The distinguished Kenyan novelist Ngugi Wa Thiongo cut a ribbon in the presence of Mrs. Herskovits, Chancellor Miller, the university librarian, and many other guests. William Bascom and Sterling Stuckey read papers. A full record of the proceedings, *The Opening of the Melville J. Herskovits Library of African Studies,* was published in 1973.

On June 30, 1971, Buckman resigned as university librarian to become president of the Foundation Center in New York.

The Present Administration

JOHN P. McGOWAN

John P. McGowan was appointed university librarian on July 1, 1971. From 1966, McGowan had been associate university librarian and director of the Science and Engineering Libraries. Appointed to the faculty, he was named assistant professor in the College of Arts and Sciences and the Technological Institute. In 1970 he was named professor of library operations research. Having worked both under Nyholm and Buckman, McGowan provided continuity in the transition after Buckman's resignation. From 1955 to 1959, McGowan was librarian of the Technological Institute Library, and from 1959 to 1966 was director of the library of the Franklin Institute in Philadelphia. He holds a B.A. from Hunter College, a M.S.L.S. from Columbia, and a B.S. in Engineering from New York University.

Under McGowan, the University Library Automation Project, which was begun as a pilot project under his direction at the Technological Institute Library in 1967, reached fruition, and technical processes and circulation control are now fully automated and completely operational. The growth of specialized reference and bibliographic services, including the use of the computer files, has also been developed. The appointment of an assistant university librarian for development in May 1975 was the result of a long-felt need to centralize the library's activities in seeking outside funding opportunities.

There has also been increased involvement of the librarians on university committees; for example, the university librarian, who has from 1953 had membership in the University Senate, was joined in 1975 by the six assistant university librarians.

In the fall of 1971 two significant administrative changes occurred when the Transportation Center Library on the Evanston campus and the Joseph Schaffner Library on the Chicago campus became administrative units of the NU Library reporting to the assistant university librarian for branch libraries. The Transportation Center Library was established in 1956 by the Traffic Institute and Transportation Center. During the first year, the Transportation Center Library purchased 13,000 volumes relating to transportation economics from the John Crerar Library, 1,200 from Simmons-Boardman Publishing Company, and several hundred from the Library of Congress.

The Schaffner Library was transferred from the administration of the Graduate School of Management.

The advances of the computerized system for library operations, as well as the new building, have brought both visitors and publicity to the library.

In the spring of 1972 the annual Midwest Academic Librarians Conference was sponsored by the Northwestern library following the tradition that the conference usually meets at a university where a new library has recently been built.

The university library has 85 librarians and 122 staff members in the main complex. Including the personnel of the branches and special libraries under the administration of the university librarian, there are 100 librarians and 144 staff members. Total recorded circulation for the system, not including in-building use, was 563,000 for 1974–75. Total volumes held by the main system for the same period were 1,725,000; net gain for the year was 60,000 volumes. Total holdings of Northwestern University Libraries, including the libraries of the downtown campus, are 2,430,000 volumes.

ORGANIZATION

The university library operates with a highly centralized organization headed by the university librarian, who reports to the university provost. Eight administrative officers report to the university librarian. They are the six assistant university librarians, the head of the Information Systems Development Office, and the music librarian.

The assistant university librarian for public services has responsibility for 11 departments: Reference, Circulation Services, Special Collections, the Melville J. Herskovits Library of African Studies, Curriculum, Government Publications, Interlibrary Loan, Map, Newspaper and Microtext, Periodicals, and Undergraduate Services.

The assistant university librarian for technical services administers a division with five departments: Search, Order, Catalog, Bindery and Marking, and Serials. The coordinator of automated services, who supervises the Data Center Department, also reports to the assistant university librarian for technical services.

The assistant university librarian for collection development directs five bibliographers: Humanities, Serials, Slavic and German, Social Sciences, and Historical Studies.

The assistant university librarian for administrative services has responsibility for budget administration, purchasing, mail and delivery, statistics, building management, the Personnel Department, security, and orientation.

The assistant university librarian for branch libraries is responsible for the Management Library, the Joseph Schaffner Library, the Technological Institute Library, the Transportation Center Library, the public and urban affairs librarian; and, in addition, supervises the science librarian, who has the responsibility for four branches: Astronomy, Biology, Geology, and Mathematics.

The assistant university librarian for development has responsibility for the initiation and development of programs designed to expand the library's contact with alumni, friends, potential donors, and funding agencies.

The university librarian is advised by three committees: the Administrative Committee formed by Buckman in 1968, which includes the six assistant university librarians; the University Library Committee, appointed by the provost, made up of eight faculty members and three students; and the University Library Advisory Staff Council of seven, independent of the Staff Association, which McGowan appointed in 1973 to represent the classified staff and to serve in an advisory capacity to the university librarian.

The Technological Institute faculty on the University Library Committee constitute the Technological Institute Library Committee and advise the university librarian on the Technological Institute Library.

Other university committees, established to advise the various librarians, include the Music Library Committee, the Management Library Committee, and the University Archives Committee.

The Northwestern University Library Staff Association, with membership open to all library staff members, was organized March 9, 1939, after questionnaires circulated by Assistant Librarian Effie Keith had indicated strong approval of an organization. The purpose outlined by the constitution declared: "The purpose of this staff association shall be to promote the professional, cultural, and social interests of its members by meetings of a social nature where discussion of library matters and informational talks by members of the profession and of the university faculty will occupy the greater part of the program."

In its history the association has fulfilled its original purpose, contributing constructively to the university library programs, for example, by concerning itself with continuing education, visits to libraries, and staff relations as well as salary improvement and retirement plans. The association has published newsletters, staff manuals, and cookbooks. Presently the association publishes the biweekly *The Lantern's Core,* begun in 1970. Various social and philanthropic activities have been taken up over the years. Present membership is 180. Eight social or educational meetings are held each year.

A separate staff committee, the Green Committee, appointed in 1972, provides and cares for plants throughout the building.

A friends-of-the-library group, the Northwestern University Library Council, was formed in 1973. Under the aegis of the assistant university librarian for development, the council meets three times a year and has a membership of 160. Activities include bibliographic lectures, exhibits, other book-related events, and the publication of an occasional newsletter, *Footnotes,* begun in March 1976.

THE MAIN BUILDING

The main University Library offers a dramatic setting both aesthetically pleasing and convenient for users. Seating arrangements for 3,000, with 654 assigned carrels and 18 seminar rooms, offer a variety of study facilities. The library was built to accommodate 40% of all undergraduates, 80% of the graduate students in humanities and social sciences, and one-third of the faculty in those disciplines, with strong emphasis on user comfort. Estimated shelving capacity in the new building's present shelving is 1,700,000 volumes, which does not include planned expansion areas in the compact storage level where—with underground expansion—eventual storage capability is estimated at 3 million volumes including the space for 1 million now available.

The first floor area of 90,000 square feet was designed for Reference, Circulation, Periodicals, Administration, and Technical Services placed within easy access to the card catalog. This level also acts as a transitional base connecting to Deering. On the plaza above is another entrance.

The Public Services Division includes the following departments.

Reference Department: holds a comprehensive reference collection of 43,000 volumes focused on the social sciences and humanities. The department offers, on an experimental basis, computerized literature searches of social science and business data bases using both batch and on-line methods, and publishes a variety of bibliographies, guides to literature, and acquisitions lists.

Circulation Services Department: with on-line computer circulation control, self-service charge-out terminals, and self-service inquiry; also administers the use of carrels and seminar rooms and is responsible for reshelving, stack maintenance, authorization of borrowing privileges, and exit control.

Periodicals Room: holds only current issues of 3,300 titles and 10,000 bound volumes of general periodical sets.

Government Publications Department: celebrates its hundredth anniversary as a depository collection in 1976, has holdings of 173,000 volumes. In addition to providing extensive traditional reference services, the department has, also on an experimental basis, participated in the library's Selective Dissemination Program notifying faculty of publications related to their interests.

Interlibrary Loan Department: processes 12,000 transactions annually. In 1972 the department joined MRML (Midwest Regional Medical Library), a cooperative library delivery system. In November 1975 a TWX machine was installed in cooperation with the Illinois Library Network.

Newspaper/Microtext Department: located on the lower level, subscribes to 120 current newspapers. The collection contains 27,000 reels of microfilm, 248,000 microfiche, and 48,000 microprints.

Map Collection: also on the lower level, contains 140,000 map sheets and a 1,500-volume reference collection. It is a depository for the U.S. Geological Survey (topographic), the Defense Mapping Agency topographical center, and the National Ocean Survey.

Departments and services of special interest to undergraduates are located on level two and administered as one unit called Undergraduate Services. The quarterly *The Undergraduate Forum* (1974) is both an acquisition list and current description of the department's services.

Reserve Room: maintains a collection of about 3,500 volumes; circulation for 1974–75 was 92,000. The noncirculating "Core Collection" contains 36,000 key books in all disciplines, selected by faculty and librarians. This collection, which will eventually reach 50,000 volumes, ensures the permanent availability of essential books, alleviating the need for an extensive reserve collection.

Poetry/Listening Facility: also on level two, a noncirculating 4,000-volume poetry collection and listening center with 5,000 records of folk, rock, jazz and blues, in addition to spoken-word recordings. Also included are projection rooms for viewing slides and films. Adjacent to it is the Forum Room, a lecture room seating 100, and the Student Lounge.

The main collections are housed on the top three levels of the three research towers: the north, the Frank C. Englehart Tower, for the social sciences; the east, the Grover M. Hermann, Jr., Tower, for history; and the south, the Deering Tower, for the humanities. On each of the levels of the research towers the stack ranges are placed in a radial pattern. At the periphery of each room is a repeating series of carrels, typing rooms, studies, and seminar rooms.

Curriculum Collection: located on level five with the Melville J. Herskovits Libary of African Studies. The Curriculum Collection contains 8,000 elementary and secondary current textbooks and 2,400 courses of study, 15,000 pamphlets, and 8,500 volumes of children's literature. The curriculum librarian also serves as the education bibliographer for the main collection. The curriculum librarian is a nonvoting faculty member in the School of Education. The monthly publication, *Curriculum Collection: Selected Recent Acquisitions*, was begun in the early 1950s.

Melville J. Herskovits Library of African Studies: consists of 83,000 volumes, 2,500 rare books, and 610 linear feet of pamphlet and document files. The collection, which embraces every aspect of Africa, is internationally known. In 1972 the G. K. Hall Company published the author/title catalog of the collection, *Catalog of the Melville J. Herskovits Library of African Studies,* a revision of the earlier *Catalog of the African Collection* (G. K. Hall, 1962). The library also has published, since January 1962, the *Joint Acquisition List of Africana.*

The Charles Deering Library, which is an integral part of the main complex, was completely renovated in 1972 and is accessible through the new library.

Special Collections Department: located on the third floor of Deering, contains 154,000 volumes of first, limited, or special editions and other scarce and valuable books. Emphasis is on the humanities and social sciences. Included are early printed books—incunabula and Aldine and Elzevier imprints; classical literature from famous 16th- and 17th-century presses; 17th- and 18th-century English publications of religious thought and history; 18th- and 19th-century English economics; German classics; the English novel from Fielding through Hardy; and several author collections, such as Whitman and Mark Twain in American literature, and N. F. S. Gruntvig, Kant, and Kierkegaard in philosophy. These collections are complemented by many others, including 11,000 contemporaneous pamphlets and documents on the French Revolution; Woodrow Wilson and Franklin D. Roosevelt collection; 1,200 items on the Spanish Civil War; literature of modern radical movements; several hundred publications published surreptitiously in Denmark, Norway, and the Netherlands during the Nazi occupation; 350 posters produced by students and workers during the May–June 1968 revolution in France; 2,100 editions of Horace; 15,500 Spanish plays from the 18th to 20th centuries; 900 Johnson–Boswell volumes; 1,500 German *Täschenbücher* dating from 1780 to 1850; English chapbooks of the early 19th century. The 20th-century collection includes 25,000 volumes of first and limited editions and association copies of English and American literature including large collections on Lawrence Durrell, T. S. Eliot, William Faulkner, Robert Graves, Ernest Hemingway, James Joyce, D. H. Lawrence, Hugh MacDiarmid, Henry Miller, Anaís Nin, Ezra Pound, Gertrude Stein, H. G. Wells, William Carlos Williams, W. B. Yeats, and mid-20th-century poetry; a collection of 20th-century little magazines totaling over 1,800 titles; extensive holdings in German Expressionism, Italian Futurism, Dadaism, and Surrealism; 4,000 private press volumes; Franz Boas's own reprint collection of 9,000 items. Among the department's manuscript holdings are the papers of Manasseh Cutler and Charles G. Dawes; T. S. Eliot, John Middleton Murry and Jules Janin correspondence; Anaís Nin manuscripts; *The Outsider* magazine manuscripts and correspondence; business correspondence of literary agent James B. Pinker; correspondence of British authors with literary critic Ralph Strauss; J. C. Powys correspondence; Colin Wilson manuscripts; W. B. Yeats–Lady Gregory correspondence; and the archives of the Gate Theatre of Dublin, Ireland.

The department's newest and most unusual collection is one of comic books, now totaling almost 7,000 issues. Unlike most library collections, this one was given to the library by members of the student body, is supported by them, used by them, and new additions to the collection are made through students' gifts.

The noncirculating Art Collection, administratively linked to Special Collections since 1970, contains 33,000 volumes.

University Archives: located on the lower level of Deering, occupies four rooms. Beginning in the summer of 1974, the archives launched an extensive collecting and reorganizational program to bring the archives up to the standard of modern educational archival repositories. In lieu of a systematic records management program, university administrators and personnel are being encouraged to voluntarily transfer files to the archives when they become inactive. Faculty, emeritus faculty, alumni, and trustees are solicited for their papers. The archives has a substantial and significant collection documenting the history and development of the university.

Information Systems Development Office: formally constituted as a department in 1973, although as early as 1967 a systems analyst had been on the staff. The office is responsible for coordinating the library's operations and future development. The present computerized system for library operations consists of the on-line circulation system, in operation since January 1970, and an on-line technical services system in operation since 1971.

The computer on which the two systems operate is shared with the university's Administrative Data Processing Department and uses six 1030 terminals and 14 cathode ray terminals (CRT) located in various parts of the library complex and two branch libraries, the Management Library, and the Technological Institute Library.

In the circulation system a record of charges and discharges of books is accomplished; some of the terminals are located in the stack areas of the main library and are used directly by library customers on a self-service basis. All books in the circulating collection have punched book cards which contain the call number and the location of the book. Users have punched plastic identification badges. An inquiry CRT terminal is located at the circulation desk. An additional CRT is located in the main card catalog area for use by the public on a self-service basis, to determine, before going to the stacks, whether a wanted book is charged out or not.

The circulation system operates on the "exception principle," with the file consisting only of records for books which are *not* in their proper places on the shelves. As a result the system is very economical to operate.

Backing up the file of on-line book records is an on-line user file, accessible either by name or identification number.

The technical services system is also on-line, and encompasses the acquisition, processing, and cataloging of both monographs and serials. Catalog cards, purchase orders, worksheets, claims, circulation cards, and book labels are produced on a batch basis.

A record for a book or serial is set up in the on-line file at the point of ordering, using MARC data if available. Individual issues of serials, as well as books, are "checked-in" at the point of receipt. Although all aspects of the technical services system have proved beneficial, the on-line check-in of serial issues, and the associated claiming of their issues, has been the area where the most dramatic improvements in efficiency and material control have been realized. The system serves as a permanent record of all bound volumes of serials, eliminating the need to post holdings to the shelf list. The on-line system provides a record of all orders issued and invoices paid and it provides for automatic as well as "on-demand" printing of "claims," for both monographs and serials. The system is used to track books and serials through all processing stages, including binding, culminating in an automatically produced "inventory record" which is the interface between the technical services system and the circulation system.

Six cathode ray terminals are used for acquisition and cataloging of monographic materials; three are used for serial operations.

Technical services files are available to public services personnel using the CRTs located in the public areas of the library.

The technical services system has stood the test of time and heavy use. However, looking forward to the future, when it is hoped to be able to close off the card catalog and substitute on-line access to materials, the system is in the process of being redesigned to simplify its use, improve file access, and increase processing efficiency. The new system will operate essentially as at present.

The NUL technical services system is a "total" library system. Bibliographic records in the system reflect NU's cataloging, which usually—but not necessarily—will be identical with the source LC record on which cataloging was based. As such it constitutes the NU "catalog," any record of which can be recalled and changed as necessary.

As of January 1976, NUL has over 200,000 titles in machine-readable form, 35,000 of which are serials. It is estimated that this represents over 400,000 volumes.

As a first step toward interlibrary sharing of the system, the nearby Garrett Evangelical Theological Seminary Library will begin to use the system in 1976.

Urban Affairs Librarian: appointed in May 1973 in response to an increasing demand for urban library resources and services. The growing national interest in urban affairs in the late 1960s and early 1970s was first reflected at Northwestern in the establishment of three urban-oriented research centers between 1966 and 1970 and a corresponding increase in urban courses among various programs, departments, and schools throughout the university. The urban affairs position is an experiment in providing specialized library services which usually are unavailable through traditional library channels. These services include in-depth bibliographic searches and compilations, current awareness services for selected users through literature monitoring, preparation of topical bibliographies for course syllabi or for general distribution, and special orientation sessions for students. These services are directed primarily to grant-supported programs and funded research projects and then to the general information needs of Northwestern faculty, staff, and students. Salary credits earned on grant-related research are transferred to the library to help offset the cost of the position. Since May of 1973 the urban affairs librarian has been jointly supported by the university library and by various academic programs and research centers including the Public Management Program, the Center for Urban Affairs, the Health Services Research Center, and the Hospital and Health Services Management Program. The librarian publishes two monthly information bulletins: the *Urban Affairs Newsletter* and *Hospital and Health Services: A Monthly Information Service.*

Evanston Branch and Special Libraries

Although the Evanston campus branch and special libraries serve the needs of the schools or departments with which they are associated, they are open to all Northwestern students.

Astronomy Library: Dearborn Observatory, contains 11,500 volumes, including journals and books on astronomy and allied subjects, as well as pamphlets, slides, films, United States government publications, star catalogs, charts, and lunar maps.

Biology Library: Swift Hall, has 43,000 volumes in biochemistry, biology, organic evolution, microbiology, molecular biology, microscopy, botany, zoology, human physiology, and speech and hearing difficulties. It includes some books on agriculture. Current unbound periodicals are housed in the Reading Room of the O. T. Hogan Biological Sciences Building.

Geology Library: Locy Hall, contains 19,000 volumes in the fields of geology, geochemistry, geophysics, and paleontology, including federal and state documents and selected foreign government publications.

Mathematics Library: Lunt Building, contains 19,000 journals, books, and reprints in the field of pure mathematics.

Music Library: 1810 Hinman Avenue, with 60,000 books, journals, and scores, represents all forms of instrumental and vocal music. The collection of sound recordings comprises about 18,000 items that are available for use in the listening center, and an archive of approximately 20,000 historical 78 rpm discs. Books and printed music are supplemented by microfilm and microcard copies of works otherwise unobtainable. The library also has its own rare book and manuscript collection which includes the Moldenhauer Archive, a 10,000-piece collection of musical manuscripts, letters, and documents. The 20th-century portion of the Moldenhauer Archive is uniquely important and includes virtually the entire work and many memorabilia of Anton Webern, with a substantial representation of his forerunners, contemporaries, and disciples. The John Cage Notations Manuscript Collection is on deposit at Northwestern, as are Cage's musical letters and documents. Manuscripts of most major 20th-century composers can be found in either the Moldenhauer Archive or the Notations Collection. Although the Music Library maintains materials relating to all aspects and periods of music, the emphasis is on the 20th century. Since the early 1970s the Music Library has systematically acquired most of the newly published scores of contemporary music. Since 1972 the library has published a monthly newsletter and acquisitions list, *The 1810 Overture*; and the occasional *Music Reference Bulletin*, an in-service guide to reference sources began January 1973.

Technological Institute Library: the Technological Institute, serves students, faculty, and research personnel in engineering, chemistry, physics, and applied mathematics. This 111,000-volume library, augmented by 2,300 current serial subscriptions and a file of 25,000 technical reports and pamphlets, constitutes a major research and teaching facility. The library offers computerized literature searches of applied and pure science data bases using both batch and on-line methods, and has published an acquisitions list and newsletter, *Engineering-Science Libraries News*, since 1966.

Transportation Center Library: level three of Deering, maintains a close relationship with both the Transportation Center and the Traffic Institute. The library specializes in the socioeconomic and operational aspects of all modes of transport, and includes important collections on traffic safety, police administration, and police training. In addition to urban and intercity transportation sources, foreign publications are well represented. Holdings include 83,000 volumes, 16,000 corporate annual reports, and 25,000 pamphlets. Subscriptions to over 3,200 serials are maintained. It is a depository for the U.S. Department of Transportation research reports distributed through the National Technical Information Service. The library issues *Current Literature in Traffic and Transportation*, a monthly listing of recent accessions including periodical articles; *Doctoral Dissertations on Transportation*, annual supplements to the basic compilation of 1961–1968; and *Containerization*, annual supplements to the basic compilation of 1965–1968. In 1972 G. K. Hall published *Transportation Center Library: Author/Title and Subject Catalogs*. Present user services include TRIS-On-Line, a computer-based abstracting/indexing service for transportation publications and research in progress, for which charges based on on-line and staff time are made. Technical reference service for fees based on staff time is also available.

Management Library: level two of Deering, with holdings on subjects pertinent to the management of corporations and the administration of hospitals, health service organizations, and public agencies, and containing 38,000 volumes and 5,000 annual reports with subscriptions to 450 journals, opened in September 1972.

The library had not existed as a separate entity since 1969 when, in December of that year, due to the phasing out of the undergraduate business program on the Evanston campus, the collection was moved and merged with the main collection; staff members were transferred to other departments. The reestablishment of the library in 1972 was effected with some reallocation of the Joseph Schaffner Library budget and a move to Deering of the former Management collections from the main stacks.

Groundbreaking for a new Science–Engineering Library to be housed in the Seeley G. Mudd Building and to be located adjacent to the Technological Institute, is to be held in March 1976; occupancy of the new building is planned for late 1977. The Science–Engineering Library will consolidate the collections of the Technological Institute, Biology, and Astronomy libraries and will provide seating for 450 individuals, which is nearly double the present combined seating capacity of these three libraries. Eventually, the Geology Library also will be transferred to the new library. Initially, the Science–Engineering Library will house 110,000 of the 172,000 volumes which are held by the science libraries; the library's projected capacity is 200,000 volumes. Even with the new building, it will be necessary for a portion of the total volumes held by the science libraries to be retained in compact storage at the university library. However, as those books and bound journals in compact storage are older and, presumably, less frequently used items, library users should not be too inconvenienced by this arrangement.

The Chicago firm of Skidmore, Owings and Merrill is the architect for the project; the firm has designed the university library as well as several other buildings on the Evanston campus. The new library has been designed to take maximum advantage of the available computer applications to library operations and microtext technology, for example, readers, materials, etc. Interior plans call for neutral-colored carpeting to be laid throughout the library and for each interior wall to be painted in a color selected from a palette of nine colors—deep tones ranging from brown to red. The first, or ground, level of the library will house the book collection and study carrels; the second, or main, floor will be occupied by the administrative offices, current journals, reading areas, circulation, reference, and a prominent microtext area; the bound journals and more study carrels will be located on the third level.

The total cost of the Mudd building will be $6.1 million; of this amount $4.5 million will be for construction, and the remaining $1.6 million will serve as an endowment which will help underwrite the yearly maintenance and operations expenses of the new building. Earlier this year the Seeley G. Mudd Fund of Los Angeles presented Northwestern University with $1.4 million to be used for construction costs.

A committee appointed in 1973 composed of representatives from the university administration, the university library, and the faculty completed the plans for the new library. The Science–Engineering Library will represent the realization of that committee's plans as well as a significant commitment by the university in support of teaching and research in the pure and applied sciences.

Although the libraries of the Garrett Evangelical Theological Seminary and Seabury–Western Theological Seminary are independent of the university, students and faculties from the seminaries and university have had reciprocal borrowing privileges from the founding of the university library in 1856. Likewise, the respective librarians try to avoid duplication of materials.

The combined library of the two seminaries, functionally one unit since 1969, contains 215,000 volumes and is the single largest integrated theological collection in the Midwest. The library collects materials in all the Western European languages and is particularly strong in Methodism, Anglicanism, American and European Protestant theology, Biblical and early Christian studies, Palestinian history and archaeology, pastoral psychology and counseling, Egyptology, missions, and religious education.

Chicago Campus Libraries

The libraries maintained principally for the students and faculties of the schools on the Chicago campus are also open to students from the Evanston campus. These four libraries developed separately from those on the Evanston campus and have been linked directly with the development of the four professional schools and Evening Divisions. The medical, dental, and law libraries are administered by the deans of the respective schools, as was also the case with the library of the Graduate School of Management, the Joseph Schaffner Library, until 1972 when it came under the direction of the university librarian.

The Archibald Church Medical Library, Searle Building, 320 East Superior Avenue, is one of the largest medical school libraries in the United States.

The Dental School Library, Montgomery Ward Building, 311 East Chicago Avenue, is one of the largest dental libraries in the world, with a collection valuable for the study of dental medicine.

The Law School Library, Levy Mayer Hall, 357 East Chicago Avenue, has a complete working collection of Anglo-American law as well as resources in comparative law, with particular reference to modern European, Roman and medieval, Latin American and Japanese law.

The Joseph Schaffner Library, Wieboldt Hall, 339 East Chicago Avenue, serves the faculty and students of the Evening Divisions and the Master's Program of the Graduate School of Management. It maintains working collections of social sciences and humanities, as well as business and economics, operating as an information center rather than a research collection.

THE ARCHIBALD CHURCH LIBRARY

In 1869 the university trustees approached the Chicago Medical College with a proposal that it affiliate with Northwestern. The college had been founded in 1859 as the medical department of Lind University. Lind later moved to the suburbs and was renamed Lake Forest University. In March 1870 the Medical College formally affiliated with Northwestern. Begun in 1860, its library contained 700 volumes, but because of a decided lack of use it was dissolved; those volumes not wanted by the faculty were given to the Chicago Medical Society shortly before the society was destroyed by the Chicago fire in October 1871.

In 1883 interest in a medical library was revived by the school's Alumni Association, which established and maintained a library for both students and alumni. This library of what must have been only a few hundred volumes was moved with the college several times, and did not grow rapidly. In 1894 the collection was housed temporarily in one of the storerooms of the bacteriology laboratory and was in such need of organization and cataloging that students from the nearby YMCA volunteered to do the job. Although the offer was accepted, no action was taken. In 1896 a donation of 600 volumes from an alumnus prompted the association to engage George E. Wire, Newberry Library cataloger and former librarian of the university library on the Evanston campus, to catalog the 1,000-volume collection.

Beginning in 1896, the Alumni Association began selling school textbooks in the library and thus received income from the profits, which were used to purchase new books. Growth, however, continued to be very slow and by 1901 the library held only 2,500 bound volumes.

In 1907 the library had grown to 6,000 volumes and the Medical School, concluding that development of the library was essential to the development of the school, took over the administration of the library from the Alumni Association. Growth was modest, however, until 1925 when Dr. Irving S. Cutter became dean of the Medical School. By then the collection stood at 13,000 volumes, and journal subscriptions numbered 75. The total expenditure for books and periodicals was $1,760 and the sole librarian continued to report to the registrar.

Cutter envisioned the development of a much different library, a library that, with specially designed quarters, would serve a school whose mandate and character were entering a new phase. At the same time Dr. Archibald Church, professor of nervous and mental diseases, announced that he and his wife intended to subsidize the library's operation. They initiated the Archibald Church Fund which with subsequent gifts grew to $333,000. A fund-raising campaign undertaken during the University Centennial in 1951 added another $390,000 to the library endowment.

The library was renamed the Archibald Church Library and from its dedication, June 1927, to the present, growth has been rapid. In 1941, when Dean Cutter retired, the library included 92,000 volumes and 600 subscriptions.

Another especially strong figure in the history of the library was Elizabeth Carr, librarian from 1944 to 1961 and instructor in medical history, a distinguished and enthusiastic librarian who contributed much to the library's growth.

In 1962 a new wing was added and the entire library underwent extensive remodeling. The size of the library was doubled to encompass a total of 25,000 square feet, with seating for 220. The library was again remodeled in 1975 after the arrival of the present librarian, Cecile E. Kramer, who succeeded William K. Beatty, librarian from 1962 to 1975. The circulation/reference and main reading room areas were painted and carpeted. New furniture was purchased. Smaller tables and individual study carrels plus comfortable chairs replaced the old long tables and uncomfortable seats.

Ms. Kramer came to Northwestern from Columbia University where she was the assistant librarian of the Health Sciences Library. She holds a B.S. and a M.S. and is a doctoral candidate in the School of Library Science at Columbia.

The library's collection of 200,000 volumes supports the needs of the education research and patient care activities of the school and the McGaw Medical Center by providing current and retrospective literature (books and journals). It has a large indexing and abstracting collection.

The library is a member of the State University of New York Biomedical Communication Network through which it has access via a computer terminal to four data bases—the entire MEDLARS–MEDLINE Data Base, *Psychological Abstracts, Biological Abstracts,* and ERIC. Lectures on the use of the literature are offered for faculty and students. A learning resource center under the direction of the library is planned for next year.

A historical collection of 10,000 volumes, many of which are extremely rare, also includes a small collection of manuscripts and a 5,000-piece collection of currently received illustrations, engravings, and photographs. The library currently receives 1,325 serials.

With a staff of 16, the library serves a medical student population of 750, 400 full-time faculty, house staff of the medical center, plus the students at the allied health programs given at the medical center.

THE DENTAL SCHOOL LIBRARY

In 1887 a dental department of the university was founded by a group of private men and called the University Dental College. In 1891 the Dental School was organized as an official part of the university.

The library of the Dental School came into existence in 1897 when the secretary of the school, Theodore Menges, purchased a library of 2,000 volumes from Dr. Jonathan Taft, dean of the University of Michigan Dental School. In 1913 the first professional librarian, Dr. William Bebb, contributed his own collection, making the dental library's collection the largest in existence, with a total of 3,300 volumes.

Dr. Bebb was succeeded in 1927 by Mrs. J. B. Smith (1927–1930) and Madeline Marshall (1930–1949). The present librarian, Minnie Orfanos, was appointed in 1950. Today the library has a staff of eight, four of whom are professionals.

The library has grown steadily. At the end of the fiscal year 1975 it contained 49,000 volumes, 13,000 pamphlets, 2,000 photographs, and 4,500 slides and microforms. The 1,250-volume Trueman Collection, a gift of Dr. William H. Trueman, is rich in anesthesia titles.

Dr. Arthur D. Black, dean of the Dental School from 1917 to 1937, created the classification system used for many years in all dental libraries. In 1970 the library changed to the National Library of Medicine Classification System to coordinate its resources with the regional program of the National Library of Medicine.

Ninety-five percent of the library's journals are complete sets. More than 700 subscriptions are held. Circulation for 1975–76 was 40,000.

Recently a National Library of Medicine grant of $29,000 provided the library with funds and a staff member for restoration of its rare book collection. A second grant was awarded both for cataloging and publishing a catalog or listing of the titles held.

The scope of collecting includes books in all languages and on all aspects of dentistry.

The library has a TWX terminal making available the National Library of Medicine bibliographic service, a Computer Assisted Instruction terminal connected to a computer on the Evanston campus, and a MEDLINE terminal. Services offered to 100 faculty and 500 students include circulation of current awareness notices, routing of periodicals, free MEDLINE searches, and publication of bimonthly acquisition lists.

THE LAW SCHOOL LIBRARY

The Law School's history began in 1859 when the Law Department of the old Chicago University was founded. In October 1873, the Northwestern University trustees reached an agreement with the old Chicago University to jointly support a law school, later known as the Union College of Law and located at Court House Square in Chicago. When the old Chicago University ceased to exist in 1886, the law school continued to operate under the auspices of Northwestern University. In 1891 it became the Northwestern University School of Law.

Until some time in the 1880s the school had operated with only a single room. From about 1889 to 1893 there were three rooms: a lecture room, an office, and a library.

The first description of the library occurs in the 1891–92 *N.U. Catalogue* which states that the library is one "in which will be found the books most constantly needed for the purposes of consultation."

In 1893, when the school moved to larger quarters in the Masonic Temple, a library room was also provided. Although the collection remained small, the faculty and students, by special arrangement, had the use of the rather good library of the nearby Chicago Law Institute, which in 1884 already had 14,000 volumes and by 1894 contained 25,000 volumes.

On the other hand, the library of the Northwestern School of Law had a modest reference collection of law reports and textbooks which by 1901 was only 3,000 volumes. Although the need for an enlarged library had been discussed since 1891, no growth occurred until John H. Wigmore became dean in 1901. Wigmore was interested in acquiring a first-rate comprehensive research collection and toward this end obtained funds for the purchase of books, later appointing the first official law librarian, Frederick B. Crossley, in 1907. In 1902, when the school moved to spacious new quarters in the Tremont House, space for the library was included. Wigmore's enthusiasm and aggressive personal, worldwide collecting program was matched by the generosity of Judge Elbert H. Gary, an early graduate of the school (LL.B., 1867). In 1903 Gary donated a collection of continental law representing 22 European countries, followed shortly by donations of the Gary Collection of International Law and Ancient, Oriental, and Primitive Law. An awareness of the significance of the research collections and an assumption of responsibility to scholars and to the legal profession in general was exhibited early. The *NU School of Law Bulletin* of August 1903 stated that the aim in acquiring these collections was "to establish in the West a new center for scholarship and research."

By 1910 the library held 40,000 volumes and in the following year Gary's significant contributions were recognized by naming the library the Elbert H. Gary Library of Law. In 1925 Gary provided additional funds for a library building and an endowment providing for the acquisition and care of books. The library grew steadily, reaching 103,000 volumes in 1932, 110,000 in 1937, and 124,000 in 1946.

Following the appointment of William R. Roalfe, librarian from 1946 to 1964, more attention was given to enlarging the staff and increasing book funds. In 1947, under the auspices of the Law School Alumni Association, the John Henry Wigmore Fund of $150,000 was established. Additional funding provided by the university supplemented these book funds and greatly strengthened all facets of the collection.

In 1960 the Robert R. McCormick Building was added to the Law School Quadrangle and space in the building assigned the library doubled its size. The new addition, named the Owen L. Coon Library, and the Elbert H. Gary Library are administered as one unit. The staff had by then grown to 13 with a collection of 170,000 volumes.

In 1964 Roalfe retired and was succeeded by Kurt Schwerin. Schwerin, with a strong background in international law, did much to increase the holdings, particularly in his own field. Upon Schwerin's retirement in 1970, Igor I. Kavass became librarian. Kavass resigned in 1972 and Schwerin came out of retirement to serve for the next year and a half as librarian.

The library currently has a staff of 18. The present librarian is Leon Liddell, appointed January 1, 1974. Formerly law librarian at the University of Chicago Law School, he holds a J.D. from the University of Texas and a B.L.S. from the University of Chicago.

In addition to receiving a general university appropriation, the Law School Library is supported by a number of special endowments, including, most notably, the Gary Endowment Fund established in 1925, the Norris E. Crull Endowment Fund established in 1966, the John Henry Wigmore Fund established in 1947, and the Barnet Hodes Fund for the creation and maintenance of a collection on local government, established in 1960. In 1967, Joseph and Mrs. Rosenberg initiated the Judge Hugo M. Friend Memorial Fund. The Phillip A. Shapiro Endowment was inaugurated in 1968 in memory of Judge Phillip A. Shapiro, and Walter G. Moses launched the Adolph Moses Endowment Fund.

For a number of years, Paul Cutler has annually provided funds to enrich the collection in such fields as biography, history, political science, and literature for the Cutler Browsing Alcove. In addition, Mr. Cutler is annually providing funds for the development of an especially fine collection on the European Common Market and on international business law.

In 1969, the Smart Family Foundation made a substantial grant providing for the development of a collection on urban affairs. Two gifts to the Law School in 1970 provided book funds; a substantial bequest of Louis Manierre established the George Manierre Collection and the bequest of Cyrus H. Adams increased the library's endowment fund.

The collections of the Law School are comprehensive. Its Anglo-American collection includes almost all the reported decisions of the courts of the United States, its states and territories, and Great Britain and the Commonwealth, together with their statutes, session laws, and subsidiary publications forming a complete working collection for every legal system in the English language. A comprehensive collection of United States government documents is maintained for the teaching program and for the use of the legal profession in general. The Anglo-American collection is supplemented by a selection of works in the fields of history, economics, and government and includes a special collection on law and social sciences. The library receives every current legal periodical of general interest published in English.

About one-third of the library's collection is made up of works in foreign and international law. The comprehensive materials in foreign law include codes, treatises, decisions, and journals of all major European countries and Japan, and a good working collection in Latin American law as well as a complete collection in the law of all nations. This large collection includes the documents of international organizations and international courts, treaty series, official diplomatic documents, treatises, monographs, and periodicals.

Holdings in other specialized fields include treatises, periodicals, and documents in criminal law and its administration, and a collection of materials in aeronautics, aviation law, commerce, and other works in the field exclusive of technical engineering publications. In addition, the library includes medieval law, jurisprudence, legal history, comparative law, and Roman law. Especially notable is the Williams Collection of Legal Instruments from 1300 to 1700 A.D., comprising 500 original instruments executed in connection with landed estates, and the George W. Shaw Collection of Early European Law.

An asset is the rare book collection of 2,500 volumes, housed in the Hardy Scholars Treasure Room adjoining the main reading room. Many are first editions of the classics of law, including a number of manuscripts and incunabula.

Today the library, which serves an immediate user population of 550 students and 60 faculty, occupies an entire side of the Law School Quadrangle extending from Chicago Avenue to Superior Street and includes four floors of working area.

With its holdings of 328,000 volumes and subscriptions to 4,200 serials, Northwestern has one of the largest law libraries in the Western Hemisphere.

In 1971, the library received a substantial bequest from the late Mrs. Agnes Millar Wigmore in memory of the late Professor Robert Wyness Millar. The Edwin E. Perkins Foundation provided a major endowment in 1972 for the purchase of books, materials, and equipment known as the "Edwin E. and Kitty M. Perkins Library Fund."

In 1974, under the will of Albert Kocourek, a fund was established for the purchase of books on jurisprudence. Professor Kocourek was a member of the Law School faculty, 1907–1940, and professor emeritus, 1940–1952.

THE JOSEPH SCHAFFNER LIBRARY

The School of Commerce, established in 1908, had a small collection of books for department use but a library was not organized until 1917. The School of Commerce Library, serving both the Schools of Commerce and Journalism, had moderate growth reaching a total of 3,000 volumes in 1926 when the School of Commerce moved, with the Law and Dental Schools, from their former building, the Tremont House on Lake Street, to the present Chicago campus where new library quarters were provided for the library by the family of Joseph Schaffner. Schaffner, of Hart, Schaffner and Marx, had been one of the early benefactors of the school and also had shown interest in the library. In recognition of the Shaffner family's generosity in equipping the library and providing an endowment for books, the library was named the Joseph Schaffner Library at the dedication in 1927.

With the Schaffner endowment, the collection of business, economics, and journalism expanded rapidly. By 1932 the collection had grown to 15,000 volumes, and by 1940 to 43,000 volumes.

In 1942, Schaffner absorbed the 11,000-volume collection of the University College Library, bringing its total number of volumes to 62,000. The University College collection, the nucleus of the present social sciences and humanities collection, was begun in 1935 when the evening schools of the College of Liberal Arts, the School of Education, and the Schools of Music and Speech were combined into one administrative unit named University College on May 11, 1933. The university library in Evanston not only supplied book funds, but did the processing, while the single staff member was salaried by University College. The evening schools, begun in 1928, did not have library facilities available before 1935. The assigned library space on the eighth floor of Wieboldt Hall was small and the collection, although never large, quickly filled the assigned space and eventually necessitated the 1942 merger.

Sophia Lammers, librarian from 1927 to 1941, did much to build the collection. She was succeeded by Thomas A. Meade, 1941 to 1943, who was in turn succeeded by Ethel B. Keller. Keller was librarian until her retirement in 1955 when Rosalie Kempe became librarian. After Kempe's retirement in 1974, Marcie Stibolt, the present librarian, was appointed.

On September 1, 1969, by a decision of the faculty and approval by the university trustees, the Graduate School of Business Administration was to be converted to a Graduate School of Management, the undergraduate business program was to be phased out, and the school, with the exception of the evening program, was to move to the Evanston campus. Consequently, in September 1971—with the role of the library, insofar as service to the Graduate School of Management, to be diminished—the library's administration was transferred first to the university library on the Evanston campus, under the direct supervision of the university librarian, then shortly after was supervised by the assistant university librarian for branch libraries. From June 1972 until November 1972 it was supervised by the newly appointed management librarian. In November 1972, Schaffner was designated a separate branch and direct responsibility was transferred back to the assistant university librarian.

Beginning in September 1971 technical processing was gradually taken over by the main university library and, although the library had used the Library of Congress system, new accessions were cataloged with Dewey; no recataloging was done. After September 1972 all technical processing was done in Evanston. The staff of 12 was decreased to a staff of three, two professionals and one assistant, who serve students and faculty of the Evening Division and the Graduate School of Management Evening Manager's Program. In the 1974–75 school year there were 4,000 students and 70 faculty. Students and faculty of the Medical, Dental, and Law Schools, as well as students and faculty of other downtown universities, also use the collection. Total circulation for 1974–75 was only 8,900 but current enrollment in the school has doubled and use has now increased.

Since September 1972, when the School of Management moved to the Evanston campus to occupy its new building, Leverone Hall, the Management Library on the Evanston campus has provided for the research needs of the Graduate School of Management, and the Joseph Schaffner Library's growth has necessarily been limited. In serving its users, the Joseph Schaffner Library, with a total volume count of 132,000 and 700 current serial subscriptions, maintains working collections of social sciences and humanities, collections of general journals, critical reference tools, and reserve materials.

SELECTED BIBLIOGRAPHY

All of the sources consulted are held by the Northwestern University Archives.

Ambrose, Lodilla, "The Lunt Library Dedication," *The Northwestern*, October 4, 1894.

Arey, Leslie B., *Northwestern University Medical School 1859–1959*, Northwestern University, 1959.

Bestor, Dorothy Koch, Letters, University Archives, December 11, 1974; February 3, 1976.

Charles Deering Library Bulletin, Northwestern University Library (March–June 1932).

Daily Northwestern, Northwestern University, 1910–1976.

Goodrich, Francis L. D., "Theodore Wesley Koch, 1871–1941," *College Research Lib.* (December 1941).

Greenfield, Harlan G., "Theodore Wesley Koch, Northwestern's Great Librarian, 1919–1941," *The John Evans Club Newsletter* (Summer 1972).

[Hatfield, James Taft], "Some Old Books in Our Library," *The Northwestern*, November 11, 1881.

Jolly, David, "The Libraries of Northwestern University: The Chicago Campus Libraries," *Illinois Lib.* (March 1954).

Jolly, David, "The Libraries of Northwestern University: The Evanston Libraries," *Illinois Lib.* (January 1954).

Jolly, David, "The Libraries of Northwestern University: General Administration and Branch Libraries," *Illinois Lib.* (February 1954).

Lammers, Sophia J., "The Joseph Schaffner Library," *Northwestern Commerce* (December 1931).

The Lantern's Core, Northwestern University Library Staff Association, 1970–1976.

Lewis, Eleanor F., and Muriel Murray, "New Deering Library to Be Ready for Use by First of Year," *N.U. Alumni News* (December 1932).

Marshall, Madeline, "Portrait of a Dental Library," *Northwestern Univ. Bull., Dental School* (December 9, 1940).

Maxwell, Margaret, *Shaping a Library: William L. Clements as Collector*, Nico Israel, Amsterdam, 1973.

The Northwestern, Northwestern University, 1881–1910.

Northwestern Library News, Northwestern University Library, 1946–1969.

Northwestern University Alumni News, 1921–1965.

Northwestern University Board of Trustees, "Minutes," 1856–1896.

Northwestern University Bulletin, 1902–1976.

Northwestern University Catalogue, 1856–1939.

Northwestern University College of Liberal Arts, "Faculty Minutes," 1856–1916.

Northwestern University Library Committee, "Minutes," 1900–1922.

Northwestern University Library, a Guide, Evanston, Illinois [1974].

Northwestern University Library Staff Association, "Minutes," 1939–1976.

"The Orrington Lunt Library," *North Shore News*, October 5, 1894.

The President's Report, Northwestern University, 1876–1948.

Quinn, Patrick M., "Profile in Purple, the Northwestern University Archives," *Illinois Lib.* (March 1975).

Rahl, James A., and Kurt Schwerin, *Northwestern University School of Law, a Short History*, Chicago, 1960.

Sheppard, Robert D., and Harvey B. Hurd, *History of Northwestern University and Evanston*, Munsell, Chicago, 1906.

Syllabus, Northwestern University, 1887–1976.

Tripod, Northwestern University, 1876–1880.

Wilde, Arthur Herbert, *Northwestern University 1855–1905, a History*, University Publishing Soc., New York, 1905.

Williamson, Harold F., and Payson S. Wild, *Northwestern University, a History*, projected publication fall of 1976.

ROLF H. ERICKSON

NORWAY, LIBRARIES AND INFORMATION CENTERS IN

INFORMATION CENTERS

Introduction

ROCKS, FJORDS, AND RIVERS

Norway is the fifth largest country in Europe and has the next-lowest population density: 125,000 square miles, 4 million inhabitants. Greatest length is 1,089 miles; total coastline, 17,000 miles. The Arctic Circle crosses near the middle of the country.

Four-fifths of Norway is more than 450 feet above sea level, consisting mostly of treeless high plateaus with numerous lakes and glaciers (1,700 glaciers covering 1,300 square miles). Glaciers and rivers of the Ice Age cut valleys in the mountains, which continue as fjords, often deep and narrow, some of them penetrating more than 100 miles into the country. (See Figure 1.)

WATERFALLS, FISH, AND OIL

The rivers reach the sea through a multitude of waterfalls; the highest one has a free fall of 974 feet. The many waterfalls are the source of inexpensive hydroelectric power, which accounts for practically 100% of Norway's supply of electricity. Inexpensive hydroelectric power has favored the development of electrochemical and electrometallurgical industries producing aluminum, zinc, copper, ferro-silicon, crude steel, and silicon carbide, and has made Norway the largest European exporter of nitrogen in the form of fertilizer.

The long coastline facing the North Atlantic made fishing a major activity in earlier times, with a large fish-processing industry. The fisheries and fish-processing activities led to research activities and to the establishment of a number of research institutes in this sector.

Norway's Continental Shelf, the largest in Europe and three to four times the area of "dry" land, has proved to contain considerable quantities of oil and gas. A hectic oil exploration activity has taken place in the North Sea with the development of new oil drilling techniques, new types of drilling platforms and equipment, and techniques for laying pipelines on the ocean floor. Special institutes and organizations for research, development, and exploration in connection with the Continental Shelf have been established, not limited to hydrocarbons only, but to the total resources of the shelf: oil, gas, and minerals, as well as marine flora and fauna. Emphasis has also been placed on the adverse effects of the shelf activities: pollution, disturbance of life cycles of fish, etc.

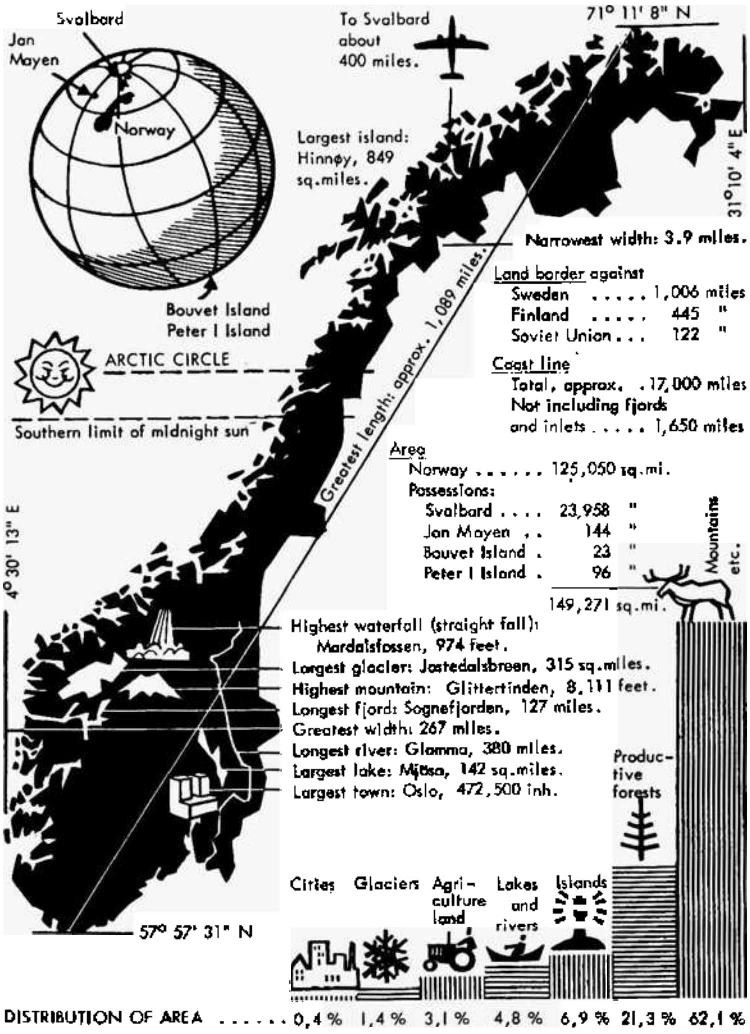


FIGURE 1. *Some demographic facts about Norway. (Reprinted with permission from* Facts about Norway, *10th ed., Schibsteds Forlag, Oslo.)*

Science and Technology

Science and research activities were originally linked with the country's culture and natural resources. Since for generations the ocean had been the source of income for the country, it was natural that Norwegian scientists would interest themselves in oceanography, marine biology, and meteorology. The phenomena of the Northern Lights early caught the interest of Norwegian mathematicians and physicists, and experiments in these fields led to the development of the method for extracting nitrogen from the air. The exploitation of this method led in turn to the establishment of Norway's first big company, Norwegian Hydro-Electric Nitrogen Company (Norsk Hydro), which today is Norway's largest (approx. 8,850 employees). The company is also actively engaged in the North Sea oil activities.

The fact that rocks and mountains cover such a large area (more than 60% of the total area) led to the establishment of a mining school as early as 1757 and of the Geological Survey of Norway in 1858. A number of mines and quarries were successively opened: copper, silver, iron ore; and later on quartz, feldspar, and nephiline. In recent years (1973/74) a company has been formed on the basis of research results on the extraction and use of "rare earth" fractions.

The dependence of early (the 1800s) Norwegian economy on fish and fisheries led to the establishment in 1860 of "Practical-Scientific Studies Concerning Salt Water Fisheries" and in 1891 to the "Government Fisheries Experiment Station for Processing of Fish Products in Bergen." The emergence of a Norwegian technology based on the work of Norwegian scientists started at the beginning of the 20th century and with it the development of Norwegian industry. As several of the first manufacturing industries were based on the results of early science and research, the expansion and further developments of industry required more research and development work and systems for importing foreign know-how. (See Figure 2.)

THE NEED FOR ORGANIZED RESEARCH AND DEVELOPMENT

In 1910 the Technical University of Norway was established in Trondheim, and in 1918 the "Central Committee for Scientific Cooperation for the Promotion of Trade and Industry" was formed. Toward the end of the 1920s the two first research associations were started: the Pulp and Paper Research Institute and the Research Laboratory of the Norwegian Canning Industry. But it was not until after the Second World War that the research activities were coordinated through national science policy bodies. Three research councils were formed after the war:

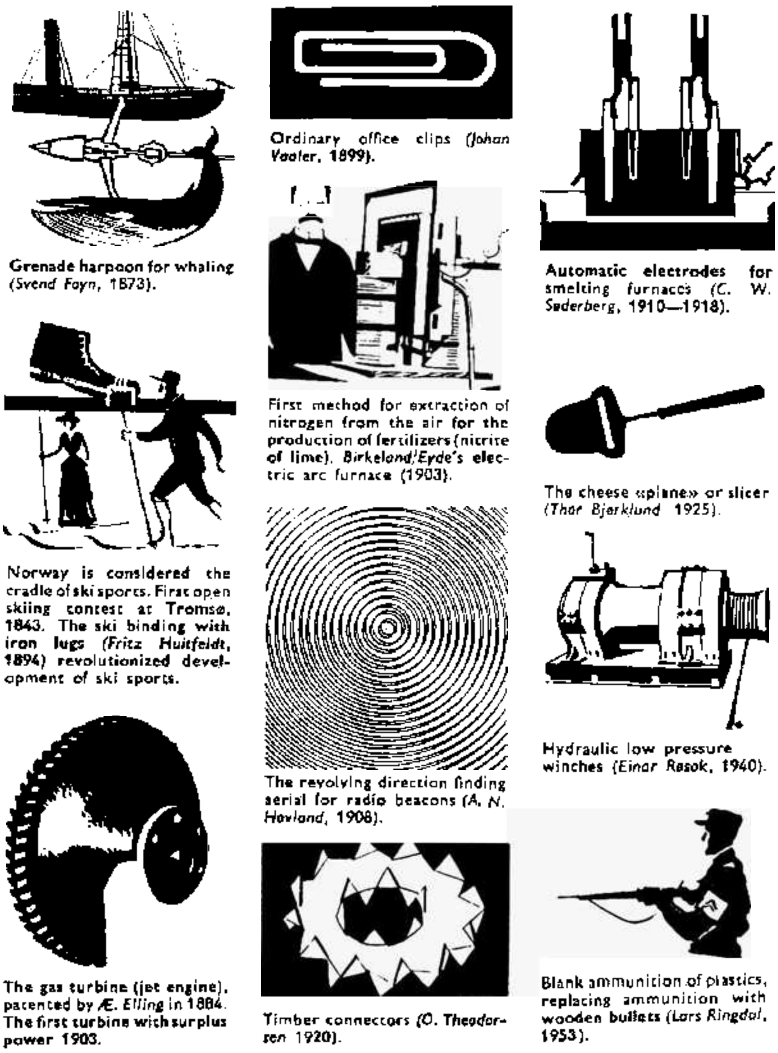
The Royal Norwegian Council for Scientific and Industrial Research (NTNF), 1946
The Agricultural Research Council of Norway (NLVF), 1949
The Norwegian Research Council for Science and the Humanities (NAVL), 1949

In 1973/74 the Norwegian Fisheries Research Council was established.

Within their respective fields the councils promote and coordinate research activities and aim to ensure that the results are being used for the benefit of the country. They stimulate the recruitment of research personnel through fellowship programs and they give grants to research activities in the universities and the various research institutes. NTNF in particular has, over the years, established a number of institutes in areas of special concern to Norwegian society. The councils have advisory committees assisting them in evaluating their research activities, thus enabling them to reinforce activities in fields that are considered to have the highest national priorities.

THE ROYAL NORWEGIAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (NTNF)

Since its founding in 1946, NTNF has established a number of advisory committees to help the council evaluate and plan research activities in the various



Grenade harpoon for whaling (*Svend Foyn*, 1873).

Norway is considered the cradle of ski sports. First open skiing contest at Tromsø, 1843. The ski binding with iron lugs (*Fritz Huitfeldt*, 1894) revolutionized development of ski sports.

The gas turbine (jet engine), patented by *Æ. Elling* in 1884. The first turbine with surplus power 1903.

Ordinary office clips (*Johan Vaaler*, 1899).

First method for extraction of nitrogen from the air for the production of fertilizers (nitrite of lime). *Birkeland/Eyde's* electric arc furnace (1903).

The revolving direction finding aerial for radio beacons (*A. N. Hovland*, 1908).

Timber connectors (*O. Theodorsen* 1920).

Automatic electrodes for smelting furnaces (*C. W. Søderberg*, 1910—1918).

The cheese «plane» or slicer (*Thor Bjørklund* 1925).

Hydraulic low pressure winches (*Einar Rasok*, 1940).

Blank ammunition of plastics, replacing ammunition with wooden bullets (*Lars Ringdal*, 1953).

FIGURE 2. *Some Norwegian contributions to progress. (Reprinted with permission from* Facts about Norway, *10th ed., Schibsteds Forlag, Oslo.)*

NTNF activity areas, such as chemistry, building and construction, metallurgy, etc. In 1976 there were 15 active committees. (See Figure 3.)

The very first committee established by NTNF was the "Committee on Technical Literature," in 1947. Its terms of reference were " . . . to promote the use of technical and scientific literature in Norwegian scientific, technical and manufacturing activities." The committee strived to achieve this through a fellowship program and through a number of activities of an operative nature. The committee had thus the double function of formulating a national information/literature policy and carrying out certain operative actions, with emphasis on the printed material.

The classic approach to the information problem emphasizing only the literature aspect was eventually found to be unsatisfactory, however. NTNF therefore

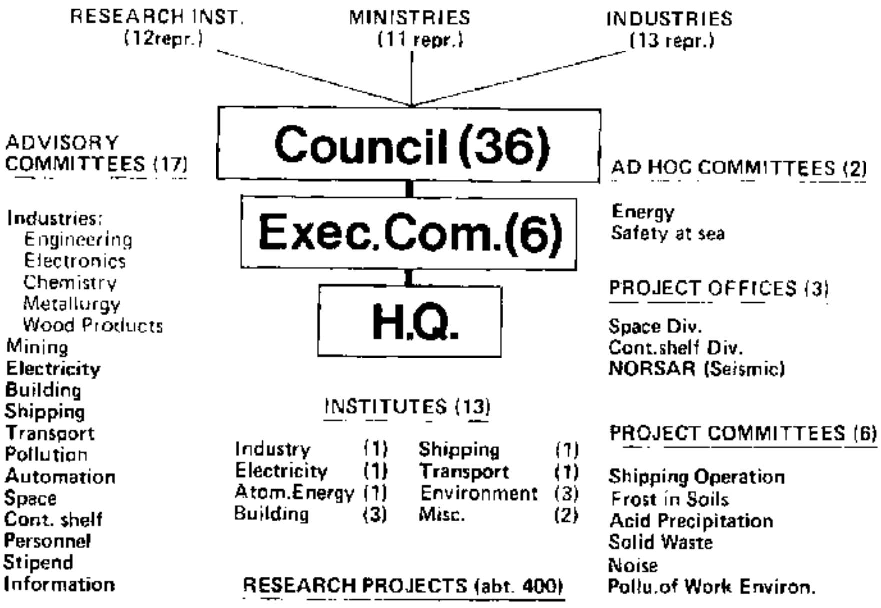


FIGURE 3. *The NTNF organization.*

reorganized the committee in 1969 and replaced its Committee on Technical Literature with a Committee on Technical Information and Documentation, the "I&D Committee." The committee was given the following terms of reference:

> The Committee on Technical Information and Documentation is an advisory committee for NTNF. Within NTNF's area of general activities, the committee shall present plans and action programs in order to promote the information and documentation service in the technical sector.

More specifically, the committee shall:

> Follow the development of I&D activities in Norway and abroad.
> Coordinate Norwegian participation in Nordic and international activities.
> Strengthen the recruitment to the I&D sector.
> Initiate and evaluate research and development projects in I&D.
> Follow up and coordinate such projects.

The committee's first task was to prepare a long-term analysis for the next 8–10 years and on the basis of that analysis, draw up a 4-year action plan. The committee stated that its overall objective should be to build up an understanding for the importance of the information activities in modern society, as information forms the basis for:

> The formulation of public (government) policies and for the decision making in public administration and in private industry.
> The initiation of R&D projects.
> The efficient generation of new technology.

The interplay between technology and society for the preservation of our environment.
The ordered growth of the future society.

The committee, aware of the limited information and documentation environment in Norway, felt that it was necessary to use the available resources to establish strong, broadly based I&D environments rather than concentrating on advanced, technically oriented pilot projects. The activities, financed by the committee, were divided into three broad fields:

Users' needs	30%
Training and education	15%
Systems, marketing, and technical aids	55%

To form a reliable picture of "technical Norway's" information needs and requirements, the committee carried out a comprehensive information study in 1971. More than 1,400 persons in trade, industry, education, and administration were asked about their information "habits" in relation to 23 different, specified information sources. Some of the findings of the study were that the practical engineer looks more for a possible solution to a problem than for more information, that he is more interested in easily available information than in reliable information, that suppliers' information ranks as the most frequently used source. This study

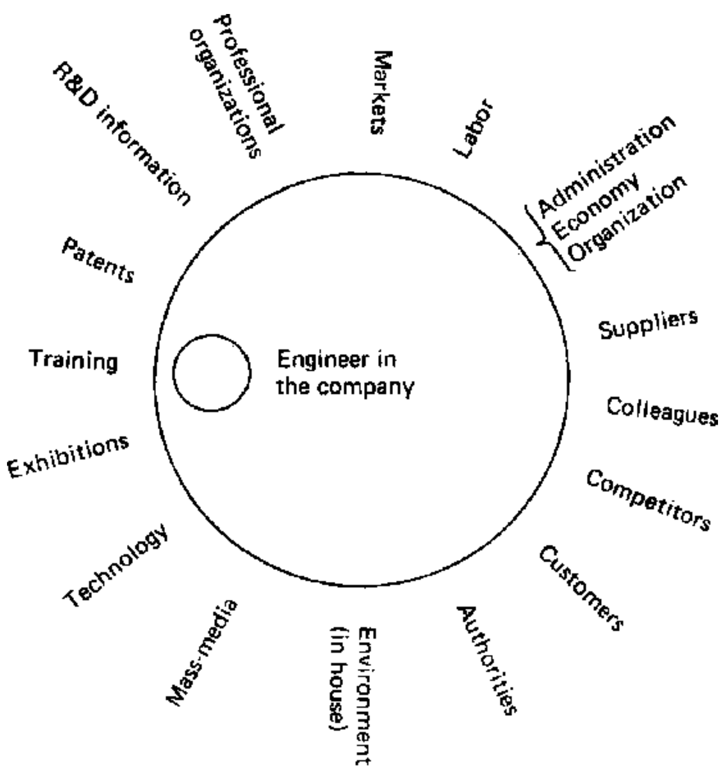


FIGURE 4. *The user's information environment.*

was followed up by a more deeply probing study of the individual user's information-gathering habits over a period of time. (See Figure 4.) The results of these two studies led to a reformulation of the committee's objectives in 1974:

> The general objective of the committee is to optimize the use of available national and international knowledge in fulfilling NTNF goals.

This implies in particular:

> That the national user population should have an active influence on the design of the information services.
> That the information transfer to and from NTNF-sponsored research must be developed to give maximum effect for the users.
> That all the sectors of society on which NTNF's research programs have a bearing must be assured access to the national and international information networks.
> That a continuous communication link be established between NTNF and society.

In light of this, the committee felt that the composition of the committee was no longer relevant, and therefore decided to dissolve itself in October 1974. It suggested that a new committee be created with members representing the practical users, marketing experts, and mass media representatives, besides traditional I&D experts. No new committee has yet been created, but some of the committee functions have been transferred to the Norwegian Center for Informatics (see below).

R&D INSTITUTES AS RETAILERS OF INFORMATION

Most R&D institutes, particularly those working in the area of applied research, recognize the fact that the end result of a project is not the written report but the action by someone as a result of the project or of the report. For institutes in industrial and agricultural research, the transfer of information to potential users is therefore a major concern.

The agricultural information service has been centralized (see the section on the "Advisory Service of the Department of Agriculture, LOT"), as has the advisory service for small and medium-sized industries (see "The Government Institute of Technology, STI"). In the NTNF system a combined centralized and decentralized approach has been adopted (see "Norwegian Center for Informatics, NSI").

It is the responsibility of each institute to ensure that the results of their own and other organizations' (national and foreign) research activities are communicated as effectively as possible to the user communities: industry and trade, local and central public administration, the educational sector. The means, media, and channels vary according to the nature of the "message," from the traditional research report and formal lectures, to the transfer of the project-people from the research institute to the users' environment (government, industry, education).

THE NORWEGIAN CENTER FOR INFORMATICS*

The Beginning

The 5 years of occupation during the Second World War, with virtually no contact with the outside world, had crippled Norway's economy and industry. Representatives of Norwegian industry therefore met toward the end of the war to discuss what could be done to meet the challenge of rebuilding the country's industry when the war was over. It was decided to establish a "Norwegian Industries Development Association" (Studieselskapet for Norsk Industri, SNI). It was formally founded in May 1944 with a limited number of industrial firms as members. After the war ended in May 1945, the Federation of Norwegian Industries presented SNI for Norwegian industry as an independent organization and recommended that industrial companies become members of the association.

In the early years of SNI, it concentrated its activities on technical development work, based on the comprehensive material that had been collected by the Norwegian industrial committees in New York, London, and Stockholm during their years of exile. SNI's main task during these years was to collect, evaluate, and disseminate to prospective users detailed information about new technology and new production methods based on this material and on new material coming in daily.

When the Royal Norwegian Council for Scientific and Industrial Research, NTNF, was founded in 1946 and the council in the following years established research institutes in a number of fields, SNI adjusted its activities to this new situation by concentrating on technical information services for industry. SNI became affiliated with NTNF in 1957 in line with the institutes initiated and established by NTNF, and became more directly involved with NTNF activities.

During this period SNI started to develop its own computerized system for storing and retrieving information, the Polydoc system, and began to work on systems development besides the traditional information services. Because of this shifting of emphasis from information services to information methods and systems, the name of the organization was changed to Norwegian Center for Informatics (Norsk Senter for Informatikk, NSI) in 1972, when the statutes also were changed.

The Present (1976)

According to its present statutes:

* "Informatics" does not have only one meaning; the French "Informatique" means computer science, the Russian "Informatika," information science. The latter has been adopted by Sweden and later on also by Norway: "Informatikk." A person working in the field is an "Informatiker." The definition of "Informatikk": the structure and properties of information, theory, and methods for storing, retrieving, and dissemination of information, processes, and services for transfer of information from source to user, based on methods and systems developed in this field.

> NSI shall promote activities in informatics and information services for the benefit of Norwegian trade and industry, research and public administration—and specifically:
>
> promote research and education in informatics
> develop methods for collecting, storing, retrieving and disseminating selective information from in-house as well as from external sources
> offer trade and industry, research and public administration assistance in establishing their information services and strive to make the systems compatible
> offer trade, industry and research information services of national or international origin in fields not already served by other organizations or contribute to the establishment of such services
> aid in the transfer of experiences and results from national and foreign research to Norwegian trade and industry
> function as an intermediary between national and international I&D organizations.

At present (1976) the activities of NSI cover the following four main categories:

General Activities: which include exploratory studies and projects, continuous development of self-competence, question-and-answer service, trainee service, etc. These activities are financed mainly through a general grant from NTNF.

Projects: which include special research and development tasks, formulated either on self-initiative or in cooperation with others. These projects are mainly financed by NTNF through special grants earmarked for each project, after having been evaluated by NTNF's advisory committee on technical information and documentation. NSI reports regularly to NTNF on the results of the projects.

Information Services: which include a number of different services, partly initiated and operated by NSI or operated on contract with other organizations or firms. These are financed mainly through payments from industry, but are also partially subsidized by NTNF.

NTNF Staff Functions: which are carried out on contract with NTNF's central organization. These are financed by NTNF as payment for services rendered and partly by NTNF's general grant to NSI.

Some Examples of NSI Activities

Polydoc, an NSI-developed, Computerized Information System. The computerized Polydoc system has been developed during the last 10 years and is based on the use of key words. Various combinations of key words and other document identifications make it possible to produce a number of different printouts with alphabetical and systematic indexes, with addresses of institutions where the documents are kept.

A number of Norwegian firms and organizations, as well as a few Swedish firms, use Polydoc today, as do two French research institutes. Polydoc makes access easier to the in-house information material (documents, drawings, patents, etc.), which might be stored in different places in the organization. Polydoc comprises three independent subsystems:

SNIDOC is the first original system, used in the production of NSI's own abstract journal *Artikkel-Indeks*.
COINDOC is a system developed specially for organizations that want to process their information material on their own computer. COINDOC can easily be adapted to any type of computer.
ALLIANCE was developed to handle literature references for two French research institutes.

A search system for magnetic tape SDI services, SARI, has been developed, and is being used for regular batch searches.

INFOIL, an Information Center for Norwegian Oil Activities. The oil operations in the North Sea and the petroleum activities on land call for a systematic information service, covering all aspects, from exploration to refining. NSI has seen this as a challenge and developed the INFOIL concept. It is based on existing foreign information services—primarily the two U.S. services, American Petroleum Institute's Central Abstracting and Indexing Service and the University of Tulsa's Petroleum Abstracts—and on close cooperation with the Institut Français du Petrol in Paris. In addition, NSI collects and stores information on oil and petroleum generated in Norway and the other Scandinavian countries. This information is made available to users as a printed index, *Oil-Index*, using the Polydoc system and will, because of the Polydoc system, be available on-line when the need arises.

In line with NSI's policy of not developing in-house competence in the different subject fields, but leaving specialized information services to the respective specialized institutes or organizations, NSI has negotiated with some of the government and semigovernment organizations for them to take over and run INFOIL when it is operative. NSI feels that it is very important that a service of this kind is operated in an organization of specialists with intimate knowledge of the many faceted aspects of oil and petroleum problems. This will make INFOIL not only an information center, but a qualified information analysis center. NSI will then be responsible for the Polydoc part only and act as consultant to INFOIL.

Artikkel-Indeks, a Norwegian Abstract Journal for Norwegian Industry. For more than 25 years NSI has published an abstract journal in Norwegian, aimed at the practical user (engineer, administrator) in industry. Some 800 technical journals are scanned each month by approximately 50 free-lance abstractors.

Articles assumed to be of special interest to Norwegian trade and industry are selected, abstracted, and indexed. The organization of the abstracts and the alphabetizing and the permutation of the key-word indexes are computerized according to the Polydoc system. The abstract journal is published 10 times a year with an annual alphabetical index of all the key words used to index the approximately 20,000 articles. Since the journal is produced by means of Polydoc and the abstracts therefore are stored on magnetic tape, the information can be searched both in the batch and in the on-line mode using either the SARI or the NSI-developed SOLO on-line search system.

The IDE(A) Service, an Intelligence Service for Industry. According to its statutes, NSI is expected to

> —offer trade and industry, research and public administration information services of national or international origin. . . .

NSI does this in a number of ways, such as traditional library and literature services, publication of *Artikkel-Indeks* and the technical journal *Ajour*, and, more recently, through a special service, called the IDE service (*I*nformation, *D*ocumentation, *E*valuation; IDE in Norwegian = IDEA in English). The IDE service functions in the following way:

The user, who is usually an industrialist or a practical engineer, presents the problem to IDE. In a dialogue between the user and the IDE representatives, the problem is defined as accurately and precisely as possible and a decision made on the information sources that should be tapped. These might be one or a number of abstract journals, text books, and technical journals available in the IDE library, or a number of data files available on the IDE terminal. At present IDE uses the Lockheed and the Systems Development Corporation's data files, accessed through the European nodes of the Tymshare network and the ESA (European Space Agency) files in Italy. Or queries are made to any other information service that might be useful, such as the American Petroleum Institute's services, Institut Français du Petrol, MEDLINE, and others—and perhaps most important of all, to people with special knowledge in this particular field.

Since IDE operates in an R&D environment* and has access to specialists in practically any field of engineering or technology, the service is able to form a small specialists team tailored to the problem to be solved. The team is composed of the user—the main member—members of NSI who are experts in information search strategies, and one or two specialists drawn from one of the NTNF R&D institutes. (See Figure 5.)

After a search strategy has been agreed upon, the information sources are queried and the information references collected. This collection of information contains a considerable amount of irrelevant material, which is sorted out by the specialists. This leaves a limited number of relevant references. The customer might now decide that this is what he wants and order photocopies of the original articles or reports. And that is the end of the project. Or he might decide that he wants an expert's opinion on the available information in relation to his problem. In that case, the photocopies are handed over to the experts, who evaluate the contents of the material to see if it gives a key to the solution of the problem at hand. A summary of the analysis of the information is presented to the customer. Again,

*The Royal Norwegian Council for Scientific and Industrial Research, NTNF, has established a Research Center in Oslo comprising some 20 R&D institutes employing about 1,800 people. In addition, there are a number of institutes affiliated with NTNF outside of the Oslo area.

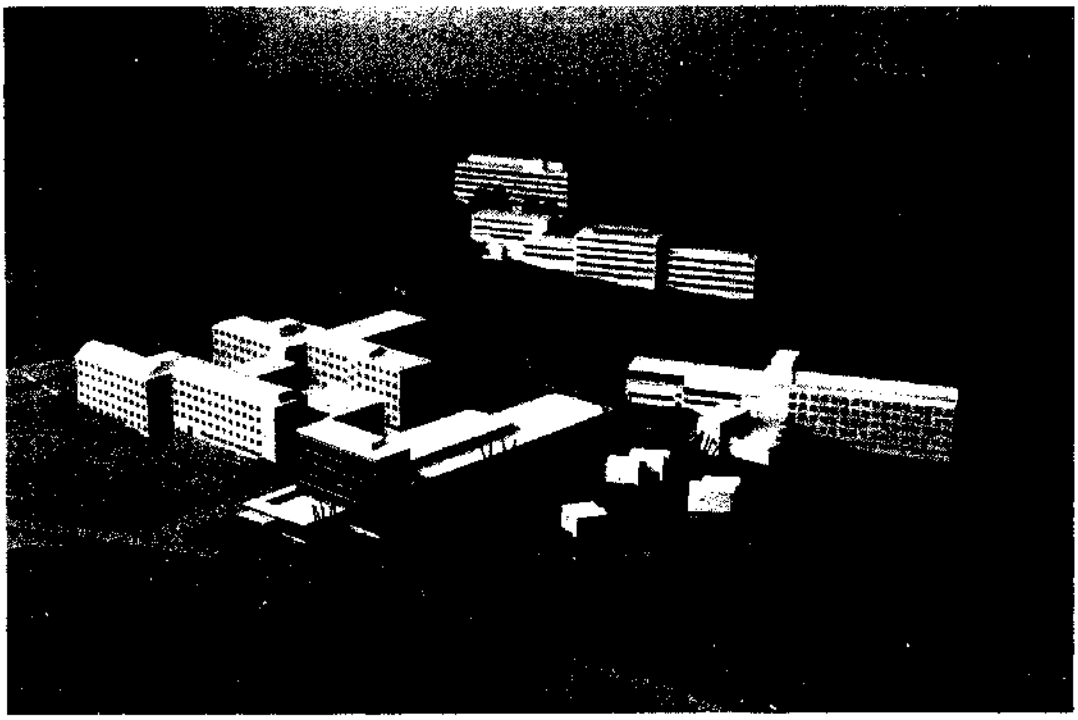


FIGURE 5. *A model of the industrial research center outside of Oslo.*

he might stop there or he might decide that he wants further work carried out by the experts, which can, it turn, lead to an exploratory research project.

Besides serving Norwegian industry in a more active way than a regular literature service ever will be able to do, IDE also serves to make better use of the know-how that is accumulated in the research institutes. It also makes systematic use of the resource that no computerized service can ever beat, the ability of the human brain to associate the past and present know-how and to involve other brains in the solution of the problems concerned. The IDE service tries to accomplish what the I&D service fails to achieve: to answer the user's call for help to solve a problem, and not to drown him in still more information.

NTNF Staff Functions Carried Out by NSI

As the central, national policy body for coordinating research activities in science and technology, NTNF coordinates a number of operational activities. NSI has been commissioned to carry out some of these.

The R&D Report Index. All R&D projects sponsored by NTNF are reported to the council in writing according to guidelines set up by the NTNF administration. Since 1974, NSI has been charged with the responsibility of holding one copy of each report, to index all reports, to publish a quarterly *R&D Report Index,* and to make the reports available for users in industry and research.

The index is produced according to the Polydoc system, so that when the number of reports warrant it, they can be searched in the on-line mode.

National and International I&D Relations. NSI represents NTNF in a number of national, Nordic, and international I&D bodies and is expected to express the NTNF view on the issues under discussion. In some instances NSI is asked directly by one of the ministries to represent Norway in international bodies, such as OECD, ECE, and AGARD.

Library Services for the Research Center. When the Industrial Research Center was established on the outskirts of Oslo in 1956/57, it was decided to make library services available to all the institutes through one main library. NTNF took on the financial responsibilities but asked NSI to operate the library, as NSI already had built up a core library for its own activities. As the NTNF institutes developed and grew, they also developed the need for their own, specialized libraries and had less and less use for the services of the central library. This was therefore changed into a library serving only the Central Institute for Industrial Research (SI), besides NSI and, to a limited degree, industry in general. In 1974/75 all the monographs of practical value were moved from the library to the offices of the SI research workers where they were considered to be of maximum use. The older books were given as gifts to other libraries and only some 1,000 periodicals and 50 reference books were retained.

Press Conferences. NTNF considers it important to communicate its results, not only to the industrial users, but also to the public at large through the mass media. NSI has therefore for some time arranged monthly press lunches on behalf of NTNF for representatives from the daily press, the press service bureaus, the radio and TV, and the technical press. The purpose of these press conferences is twofold: to present research projects, research results, and research institutes to the press; and—most important of all—to acquaint and familiarize the press with the research environment.

These activities are expected to be expanded in the future to include special press seminars, courses, and visits to R&D institutes to encourage the press to take a more active interest in research in applied science and technology.

The Future

Information is no longer considered as an isolated activity, as an extension only of the libraries' traditional services to the community. More and more people recognize as a fact that information must be considered as an interdependent "industry," a major producer of goods and services, and an important source of employment in the 1970s and 1980s. We are moving toward the information society.

This represents a serious challenge to the organizations working in the information field: the need for ability and flexibility in adapting to the changing information environment. NSI has gone through a number of distinctly different stages and is at present adjusting to the expected demands of the future.

During its inception and early years of operation, NSI considered its primary task to be its work at the further end of the innovation process: import to and application in Norwegian industry of products and processes developed abroad. As these functions were taken over by industry itself, NSI moved down the innovation line and concentrated on the collection and dissemination of information to industry. While this activity was being kept up, however, it was felt that, with the steadily increasing amount of in-house information that the industrial firms had to handle, the technique of storing and retrieving information was becoming a major concern.

While NSI's Polydoc system was originally developed for the production of the NSI-produced abstract journal *Artikkel-Indeks,* a new version, COINDOC, was developed in 1971/72 in cooperation with a Norwegian firm and offered to industry as a complete package. The sales contract was based on the reciprocity principle, that the results of any development work carried out by the buyers should be handed over to NSI without recompense and that the buyers should have free access to the results of NSI's own development work. The buyers (as of 1976, three Norwegian and three Swedish major firms, and one Danish and two Nordic organizations), together with NSI, have formed an experience-exchange group that meets a few times each year to discuss the use of Polydoc/COINDOC, the results of new applications, and the plans for further development work.

Information is not only technology, methods, and systems, however. Information is also the human's reactions to the signals from the system, how he translates the signals into intelligent messages and the messages into actions. The institute has started preparing itself in a small way to be able to adapt to this new situation. It has introduced a new activity, "information sociology," and expects this to become one of the major areas of activity in the next few years. Its aim is to bring about a better understanding of man's reactions in an information environment, and to adjust the information services to man's ability to understand and to make use of these services.

Today's criticism of the increasing expenditures on research and development in "hard" science and technology is partly due to the research community's negligence in communicating satisfactorily with society. This too is part of the information activity, and while this should be the responsibility of all the R&D units, there will be the need for some central unit which can coordinate this activity, build up the necessary know-how in communication strategy, and make this available to those who need it. This too will be one of NSI's future responsibilities.

The basis for information analysis, technology transfer, and technology assessment is the information service. As the analysis of available information might lead to the identification of new R&D programs, the technology transfer to the establishment of new industry, and technology assessment to an influence on the development of modern society, information should be considered in a much wider context than is usually the case today. This wider concept of information as a basic tool for broad policy considerations must be met by NSI in the future by developing the mechanisms needed for handling issues of this type.

International Relations

For a small country like Norway, the contact with other countries is, of course, very important. As only a small part of the know-how needed to maintain Norwegian trade and industry is produced within Norway, it is vital for the Norwegian economy that the channels to the world's information sources be kept open. This is done in the usual ways: library exchange agreements, purchase of and subscriptions to technical literature, querying of computerized information bases, attendance at international conferences, exchange of people, and active participation in international organizations.

NSI is commissioned by the research council to represent Norway in a number of regional and international organizations. The main ones are the following:

Nordforsk (Scandinavian Council for Applied Research—Committee on Technical Information, see Nordforsk, below)
NORDDOK (Nordic Committee on Scientific and Technical Information and Documentation, see NORDDOK, below)
OECD (Organization for Economic Cooperation and Development)—Information Policy Group
FID (Fédération International de Documentation)—Information for Industry
AGARD (Advisory Group for Aerospace Research and Development)—Technical Information Panel

THE GOVERNMENT INSTITUTE OF TECHNOLOGY (STI)

STI's aim is to serve Norwegian trade and industry as consultants and to train and educate adults in trade and industry subjects. Its activities are directed mainly toward small and medium-sized firms and to all levels in the firm: management, supervisors, and skilled laborers.

The institute is an independent institute, directly under the Ministry for Industry and has (1975) 300 employees. Its headquarters and technical sections are located in Oslo, where it is equipped with laboratories and workshops for carrying out experiments and demonstrations in connection with its courses and training programs. Since STI is supposed to serve the whole country, it has established regional centers in eight cities.

The regional centers offer assistance in management, organization, economy, marketing and production techniques. Technical assistance and information is offered mainly by the technical sections at the headquarters in Oslo. These cover subjects such as automation, building and construction, electro-technique, paint and varnish, graphics industry, manufacturing industries, metallurgy, motors and automobiles, plastics, welding, wood working, meat processing, and baking and confectionery. STI's services aim at solving practical problems and transforming results and experiences from research and development to a level that is of use in less advanced industrial firms.

THE ADVISORY SERVICE OF THE DEPARTMENT OF AGRICULTURE ("LOT")

The advisory services for the Norwegian farmers are organized partly by the public agricultural administration and partly by agriculture's own organizations and associations. They cover technical/economical planning and information for the individual producer, with approximately one advisor for every 200 farmers. The special advisory service, LOT, was established in 1954. It includes a number of special services.

The Abstracting and Reporting Service

LOT publishes a loose-leaf series which offers a summary of results of national and foreign research, teaching methods, and new equipment. This monthly series is sent free of charge to some 2,500 addresses, and covers about 250 items per year. The abstracts are prepared by research specialists who do the work on a free-lance basis. Similar abstracts from the Danish and Swedish abstracting services are incorporated in this series.

Digests

LOT prepares short, popular digests on subjects of interest for the operation of farms. They are usually restricted to problems relating to production techniques and economic problems, but may also cover more comprehensive subjects.

The subjects covered by the digests are partly chosen by the LOT staff, partly based on questionnaires sent to the agricultural schools and members of the advisory services. LOT aims at making the presentation as simple as possible, in a language that is easily understood by the practical farmer and with a maximum of new information.

The Press and Information Service

LOT prepares press releases, presenting the newest research results in a short, precise, and popular form, adapted to the style of the daily press. The material is taken from research reports, national as well as foreign, and obtained through personal contacts with the specialists. Each year about 300 releases are prepared and sent to the press. In addition, LOT arranges visits for the students at the Norwegian School of Journalism to the Norwegian Agricultural College, experimental farms, etc.

LOT is also responsible for a short, weekly radio program, related to the farm activity at that time of the year and offering advice on practical jobs. LOT arranges regular information meetings, where the research workers meet those whose job it is to transform and transfer the research results to practical use. The projects and their results are presented in short, informative lectures. In the discussions following the lectures, the research workers are confronted with the views of the practitioner, and receive correctives and ideas for future work.

Inter-Nordic Organizations

NORDFORSK (SCANDINAVIAN* COUNCIL FOR APPLIED RESEARCH)

Nordforsk was founded in 1947 by the technical and scientific academies and research councils in Denmark, Finland, Iceland, Norway, and Sweden. The aim of Nordforsk is to promote and organize Scandinavian cooperation in technical and applied scientific research and to help disseminate and to make use of the results.

In the early years, Nordforsk limited itself to initiating and stimulating such cooperation and acting as organizer for conferences, seminars, and meetings of various kinds. These meetings often resulted in the establishment of research committees in specific areas, such as mechanical engineering, foundry work, fat-chemistry and fat-technology, aroma, pesticides, and water and air research (later included in the Nordforsk environmental secretariat).

Nordforsk was given its own secretariat budget in 1957 and, from 1965, a special research fund, the first of its kind in Scandinavia. Both budgets were financed by contributions from the four countries in the ratio 1:1:1:2 (D:F:N:S). The fund was used to finance studies and pilot projects in special areas where it was expected that long-range cooperation would be advantageous.

Nordforsk does not usually sponsor cooperation on a permanent basis, however. The Nordforsk philosophy is to sponsor activities in high priority areas for a period of, usually, 3 years. If these activities are important enough, the bodies concerned (research institutes or associations, trade and industry associations, etc.) are expected to take over the economic and technical responsibilities. If they are not willing to do so, Nordforsk feels that this is an indication of a low priority activity and concludes that Nordforsk should not invest more time and money in that particular project, but should move into other areas.

A critical one-man study of the organization, initiated and sponsored by Nordforsk, was presented for the Nordforsk general assembly in 1968. As a result of the study and its recommendations, the Nordforsk research fund was increased and its activities directed toward active cooperation in research: sharing of work and costs for these activities by the participating institutes, above and beyond the Nordforsk involvement.

A further development of the Nordforsk idea was initiated in 1972, when the Nordforsk board decided to carry out studies in the following areas:

Technical Information and Documentation
New Materials

* Although "Scandinavia" in a strict geographical sense includes Denmark, Norway, and Sweden only, it is often used to include Finland and Iceland as well. "The Nordic countries," which is the correct term, is more cumbersome to use, however. "Scandinavian" and "Nordic" are both used to include all five countries.

Environmental Protection
Data-Handling and Processing
Chemical Engineering
Medical Technology
Interdisciplinary and Contact Activities

For each of these areas, special committees were established or, in the cases where they already existed, were reorganized and given new terms of reference.

Nordforsk—Committee on Technical Information and Documentation

The committee was established in 1953 as the first Nordforsk committee and has been reorganized a number of times. In its earlier years the committee concentrated on the arrangement of conferences and specialized courses, such as courses for literature engineers, courses in abstracting techniques, use of patent literature and of metallurgical literature, computerized information systems, etc.

In 1960 the committee created *Scandoc,* the Scandinavian Documentation Center in Washington, D.C. Scandoc is a service institution for Scandinavian industry and research. In each of the Scandinavian countries, a special center places orders with Scandoc for research reports, doctoral theses, and other material that is not readily available through the usual channels. The Scandoc activity has increased steadily, in spite of Scandoc's effort to establish direct contacts between the Scandinavian centers and the various U.S. and Canadian information centers.

In 1973 the Nordforsk Committee on Technical I&D carried out an I&D sector study, including a program catalog of possible I&D projects. The study claims that the basic factor for continued social and economic growth in Scandinavia is, among other factors, a systematic import of technical information from other countries and the efficient use of this information and of the information generated within Scandinavia. The technical I&D service must therefore be given high priority:

Nordforsk should take an active part in correlating the operations of the national I&D bodies with the international activities.

Nordforsk should engage itself in the use and price policy of Scandinavian and international I&D services, in research in I&D, in the development of I&D models, and in the marketing of technical I&D.

The Nordforsk activities should be based on the Scandinavian countries' own I&D policy, and build on the needs and requirements and the active participation of two or more of the countries in the Nordforsk I&D projects.

The Nordforsk activities should include surveys, pilot projects and studies, coordination of national activities, and active, joint-Scandinavian actions.

This is in line with the OECD recommendation in "Information for a Changing Society":

Special consideration should be given to the possibility of pooling resources of smaller countries to avoid the necessity of duplication of national systems. A sharing of experience among the smaller OECD nations might shed light on problems and alternative strategies in this field.

The Nordforsk project catalog includes some 25 projects, divided into eight fields:

1. I&D research (basic)
2. Computerized documentation: integration of systems
3. I&D as factor in decision making
4. User needs and marketing
5. Education and training
6. Coordination with international activities
7. Common service arrangements
8. Others

All projects should be based on the AC principle (AC: Action concerté, expression introduced within Europe's Common Market in the Agrain report). AC is based on the principle that a project should not be financed by the Nordforsk research fund unless it is given high enough priority by at least two of the countries to motivate national financing of the project. Nordforsk financing should be restricted to the initiating activities and to those extra "supra-national" activities that are needed to coordinate the national projects as a Nordforsk project. The main activities will still be the national ones, but with Nordforsk overtones. Three AC projects are underway (1976):

1. Scandoc, the documentation center in Washington, where the major costs are carried by the national organizations (research councils or academies), and Nordforsk covers some of the basic costs.
2. The Technological Gatekeeper, a two-country project (Norway and Sweden) to identify gatekeepers in a number of Norwegian and Swedish firms and organizations and to study their functions.
3. Establishment of a Scandinavian information network, Scannet, to connect information centers in Scandinavia via minicomputers and leased lines to host computers and to other nets, for example, ESA (European Space Agency, formerly ESRO), Euronet, and national and commercial nets (Cyclades, Tymnet, etc.).

Other proposed AC projects are:

4. Feasibility study for the establishment of a data bank on steel and iron.
5. An index and data bank on Scandinavian R&D reports, with possible extension to on-going R&D projects.
6. Establishment of a Scandinavian documentation center in Japan.

Nordforsk's past has proved that it has a future. Nordforsk has a special task in the I&D sector, since effective information and documentation involve problems that cannot be solved on the national level only, but require regional and international cooperation. The Nordforsk I&D activity is a step in that direction.

NORDDOK (NORDIC COMMITTEE FOR INFORMATION AND DOCUMENTATION)

In 1969 the governments of Denmark, Finland, Norway, and Sweden carried out a series of comprehensive studies as a basis for a proposed Economic Nordic Union. As part of the studies the creation of a number of new bodies, organizations, and measures was suggested. For political reasons the Economic Nordic Union was never established, but some of the proposed bodies have been realized as a means for closer cooperation in specific fields.

One of these is NORDDOK, which was created by government decree in November 1970, and incorporated in the general cultural agreement in 1972. NORDDOK's main objective is to promote the organization of Nordic information structures and networks (formal and informal) and their connections to national and international structures and networks.* NORDDOK shall follow the development of the Nordic I&D activities and strive to coordinate the Nordic countries' policies in this area.

At present (1976) library policies and activities are not included in NORDDOK's statutes, but it has been decided that this will be changed so that NORDDOK will be responsible for the coordination of library, documentation, and information activities in the Nordic countries. In a recent study, sponsored by NORDDOK, it was recommended that NORDDOK be reorganized by 1977 and that regular library activities be included in its activities. Its name will be NORDINFO (see below).

NORDDOK's aim is primarily to promote the transfer of knowledge among the member countries. This assumes that information channels will be established at different levels and in different subject areas. These channels, however, must be designed to carry not only Nordic information but to receive and transfer international information to the Nordic users and vice versa. An increased cooperation will make it possible, for the same cost, to gain access to a greater number of information sources.

A further advantage will be achieved through sharing the responsibility for the purchase of specialized literature among the libraries (the Scandia Plan).

Organization and Activity

NORDDOK has two members from each of the member countries and meets four to six times a year. The chairmanship and secretariat circulate among the members for 2-year periods.

* There is a close cooperation between NORDDOK and Nordforsk's I&D Committee. While NORDDOK is supposed to cover the whole I&D area (agriculture, humanities, science), Nordforsk is restricted to technology and applied science. NORDDOK therefore leaves these areas to Nordforsk and concentrates on those areas where no Nordic organizations are active. In addition, there is a considerable overlap of members in the two organizations; at present (1976), two of the four Nordforsk I&D members are members of NORDDOK. (The chairman of the Nordforsk I&D Committee is a NORDDOK member and the chairman of NORDDOK is a Nordforsk I&D member!)

NORDDOK handles a broad spectrum of problems: policy questions, coordination of activities, research and development projects, pilot projects and studies, etc. NORDDOK does not have an expert secretariat, but relies on outside help and buys the necessary expertise for carrying out studies, surveys, etc. NORDDOK cooperates closely with the national I&D policy bodies, Dandok in Denmark, Tinfo in Finland, Norindok in Norway, and Sinfdok in Sweden.

NORDDOK activities can be divided into two main groups, secretariat activities on one hand and feasibility studies–coordination activities–I&D projects on the other. The latter include studies of various types: policy questions, state-of-the-art studies, pilot studies and surveys as preparation for larger projects, coordination of national projects and activities, arrangement of conferences and courses, preparation of project indexes, etc.

The project activities are NORDDOK's major responsibility and will demand the major part of its budget. The projects are contracted to operative institutions or special research groups outside of NORDDOK. The main task for NORDDOK in the immediate future is the establishment of an information network, Scannet, in cooperation with Nordforsk.

NORDINFO (NORDIC COMMITTEE FOR RESEARCH LIBRARIES AND SCIENTIFIC DOCUMENTATION AND INFORMATION)

The Nordic coordination committee for information and documentation, NORDDOK, which was established in 1970, did not include the activities of the research and special libraries. As of 1977 an enlarged committee, NORDINFO, covers library as well as documentation and information activities. It is established within the framework of the Nordic Cultural Agreement, as was NORDDOK.

NORDINFO shall promote research and development in library and information science and services, and particularly:

- Follow developments in these fields both in the member countries and abroad
- Encourage and coordinate communication of information activities on the national, Nordic, and international levels
- Initiate and carry out studies and projects, including development of systems as well as training and education
- Offer advice and consultation services to national and Nordic bodies

NORDINFO has three members each from Denmark, Finland, Norway, and Sweden, and one member from Iceland. The three national members shall represent library science, information science, and the user population, respectively.

NORDINFO can establish task forces and engage experts for dealing with special problems. It is financed through the Nordic Council of Ministers, on the basis of a proposed work program and budget. The budget covers secretariat functions and development programs, including the individual projects.

ANTON DISCH

LIBRARIES

Provincial Culture

There is, of course, a clear connection between the political, social, and economic history of a country and its cultural evolution. This becomes obvious when looking at the development of universities, libraries, museums, and other institutions aiming at the advancement of learning.

At the beginning of the 16th century, Norway was not an independent country. It had been governed in the two previous centuries by either one or the other, or at times both, of the other Scandinavian countries. In his coronation charter of 1536, the Danish King Christian III had to promise that Norway would not be an independent kingdom, but would forever remain a part of Denmark on the same terms as the other parts of that country. Even though this charter never became a political and constitutional reality, it nevertheless greatly influenced the cultural conditions in Norway over a period of 300 years. The university located in Copenhagen was from 1482 to 1811 the University of Norway, and in Copenhagen also the university library was to be found. The Royal Library in Copenhagen was the national library of Norway as well until 1814.

The art of printing did not come to Norway before 1643, long after it had been in operation in all other European countries. Learning and library culture in Norway had its center in Copenhagen. This, however, was not a result of political suppression. What it reflected was Norway's political and economic inability to support its own independent scholarship and literature.

There were, of course, books and book collections in Norway in the Middle Ages, but none of them deserved the name of library, and none continued to exist without interruption to become the foundation for present-day libraries. The bearers of culture were clergymen, judges, and army officers. But they were few, and they lived in comparative isolation so that they were unable to create any active cultural center. The highest educational institutions in Norway were four schools which awarded degrees enabling the students to enter the university. These schools also housed the country's only public libraries in the 17th century. However, each library was small and without any great influence elsewhere. The conditions did not change much even after a decree in 1775 which ordered opening the four libraries to the public.

Better economic conditions in the last decades of the 18th century gave rise to intellectual activity even though the Danish authorities for a long time tried to centralize all of the country's political and cultural institutions in the common capital of the twin monarchies, Copenhagen. Voices were raised both by Norwegians and by liberal Danes in favor of a Norwegian university, academy, and library. The realization came in 1811, only 3 years before the final dissolution of the Danish–Norwegian state during the Napoleonic wars.

Meanwhile, something else happened which proved to be of lasting influence on the scholarly activities in Norway. The Royal Norwegian Society of Science and Letters was founded in 1760 in Trondheim. Its library is the oldest one in the country that has continued without interruption to the present time. It is now a part of Trondheim University Library.

Three enthusiastic scholars assisted the birth of the new Society of Science: Bishop Johan Ernst Gunnerus, 1718–1773, a distinguished philosopher and theologian, educated at German universities, who made his most important contributions in the field of zoology and botany and was rector of the cathedral school; Gerhard Schøning, 1722–1870, who became the founder of the modern school of Norwegian history; and Peter Frederik Suhm, 1728–1798, a young Danish nobleman who married a Norwegian heiress in order to be able to concentrate on historical research. These were soon joined by a circle of civil servants and citizens of whom only a few, alas, had scholarly qualifications. How narrow the endeavor really was can be understood by the fact that Schøning's scientific studies came to an abrupt halt when Suhm left Trondheim in 1765 and took his library with him. Without Suhm's library, no historical research was possible and Schøning also had to leave for Denmark. Such was the situation even in the second part of the 18th century.

Nevertheless, the society was destined to become a center of studies investigating the country, its natural resources, and its people. A library gradually developed, based on gifts and exchange material. The first catalog appeared in 1770, others followed in 1779, in the 1790s, and in 1808. They bear witness to the diligence of the society's unpaid collaborators. The collection grew in size from 600 volumes in 1770 to 16,000 in 1808, but that its composition remained haphazard was due indubitably to the fact that no planned acquisition was possible. A change came in 1780 when Gerhard Schøning donated his large (12,000 volumes) collection of humanistic literature which enabled research in several fields of knowledge. Of great importance was the next, though smaller, donation by a wealthy landowner, Christopher Hammer, consisting of 2,500 books on science, accompanied by a gift of money. This proved to be doubly welcome during the meager years of the 19th century.

The Royal Norwegian Society of Science and Letters, during the first 50 years of its existence, was the only scholarly institution in Norway concerned with the development of a research library in science. Trondheim became the cultural center of Norway. But the situation changed rapidly.

OSLO, THE CAPITAL

The first Norwegian university was founded in Oslo in 1811, and 3 years later Oslo became the capital of the Norwegian state. Since the new state had only limited resources at its disposal, these had to be concentrated in Oslo. The library of the Royal Norwegian Society of Science and Letters lost its leading role, and when a Norwegian Academy of Science was founded in Oslo in 1857, it automatically became the main center of learning while its forerunner in Trondheim was reduced to a provincial status. The aspirations of the Trondheim library as a universal library had to give way to a concept of specialized research in support of the activities of the society's museum, which were centered around archaeology, zoology, botany, and the general history of civilization.

The University Library of Oslo

The beginnings of Oslo University were modest. Its first six professors started their lectures in 1813. One of them wrote in a letter dating from the same year:

> I need not tell you how keenly we feel the lack of our books. I have seven books here with me. Even my notes and excerpts are back in Copenhagen. The excellent library of the school here is my only consolation.

He was referring to the cathedral school in Oslo and its library which—together with the large private library of the ironmaster Carl Deichman, donated to the town of Oslo in 1780, and a few other private collections—was accessible to the Oslo University teachers. At that time this joint library had rather less than 10,000 books.

The kernel of the new University Library consisted of a collection of duplicates donated by the Royal Library in Copenhagen and by the King himself. This donation was agreed upon before 1814 when Denmark lost Norway, but it was faithfully carried out in 1815. Together with other donations and the first purchased books, it swelled the size of the new University Library to some 60,000 volumes in 1817, though some were duplicate copies and others of doubtful value.

The library's first director was Professor Georg Sverdrup. This was in a way a second job, since Sverdrup was a regular professor of Greek and Latin at the Oslo University. But his name gave the library the desired status because he was a well-known scholar, having taught previously at the University in Copenhagen. He returned to his homeland upon the founding of the Oslo University. He played a distinguished role in the politics of 1814 by acting as the King's counsellor and as president of the constitutional assembly at Eidsvoll. In his interest in the library, he must have been influenced by the years of his study at Göttingen, where he was the pupil of Christian Gottlob Heyne, director of the Göttingen university library, regarded at that time as a model research library.

The new University Library moved, in 1819, into an old residential building in the center of the old city and opened its doors to the public. From then on a large number of its clientele were citizens who had no clear connection with the university. The library functioned also as the lending library in the country.

Until 1814, Norwegian printers had to send a deposit copy of every item they printed to the Royal (Danish) Library. After that date, they had to send three copies, one each, to the following institutions: the new Oslo University Library, the King, and the Police Department. There was no considered plan behind the requirement for sending a deposit copy to the University Library—making this library in fact a national library. What the arrangement really showed was the lack of any other library which would be the proper place for housing the continued collection of every item printed in Norway. This law was valid only until 1839 when a liberal crafts law abolished any deposit copy whatsoever. The former law had never really been popular anyway because it was connected with censorship. From that time on, until 1883, no deposit copies were collected at any place in Norway, with the consequence that it was difficult later to fill in the gaps left by these years. After 1882, deposit copies were again sent to the Oslo University Library, which was charged with holding an authors' register to guard the copyright of Norwegian authors. The latter task proved of little importance as other institutions were developed which were better suited to this purpose. Of more importance, however, was the library's obligation to compile and publish an annual bibliography of all printed matter in Norway. From then on the University Library functioned as a bibliographic center and as a guardian of Norwegian bibliographies. In the years from 1883 to 1920, the national bibliography was published in annual volumes. From 1921, it changed into 5-year cumulations. Annual volumes reappeared in 1952, and today the library issues monthly lists, annual bibliographies, and quinquennial volumes. Norwegian periodicals were cataloged in a register up to 1920. In 1973–74 a comprehensive registration of all Norwegian newspapers was published, and since 1956 an annual bibliography of governmental papers has been compiled. These are the main national bibliographies.

The copyright deposit of Norwegian material was revised once again in 1939, when war seemed to be imminent. It was then decided to drop the author register and to have three, instead of one, deposit copies sent, respectively, to the University Library in Oslo, and by request to the Bergen Museum and the Royal Norwegian Society of Science and Letters in Trondheim. This resulted in a kind of selective copyright deposit whereby only the University in Oslo received all the material. The idea was that at least one copy should be preserved in case of a war or other catastrophe. The result was, of course, that the two other libraries, now part of their respective universities, have considerable, though by no means complete, collections of Norwegian literature of their own.

The University Library in Oslo had a difficult start. The Norwegian state was on the brink of bankruptcy after the dissolution of the union with Denmark and after the war with Sweden and the allied states. Only in 1850 could the library move to a building properly designed for the purpose, situated in the center of the city and next door to the main university buildings. It remained there until 1914. There was room for 250,000 volumes, and through adaptations, a collection of double the size could still be housed there.

A new library was built in 1914 for a million volumes, with plans for future extensions enabling the storage of up to 3 million. At that time, the building was considered very advanced and was based on a concept of three main sections: rooms accessible to the public (reading room, delivery, catalogs), stack rooms, and offices for the personnel. The building was extended twice, in 1933 and 1946, but the basic plan remained unchanged.

The idea at the beginning was that the University Library in Oslo should cover the whole spectrum of research literature. Later on, an agreement was reached with other institutions to take over the responsibilities of covering some fields, such as agriculture (Agricultural College of Norway), technology (Norwegian Institute of Technology), and statistics (Central Bureau of Statistics), while the University Library in Oslo specialized in humanistic studies, science, medicine, theology, social sciences, and art.

The oldest card catalog of the library was alphabetical, started with the opening of the library. In 1882/83, when deposit copies of Norwegian material began to pour in, it was divided into two sections, one containing Norwegian literature and the other all foreign material. A duplicate of both was rendered accessible to the public in 1914. Systematic catalogs were begun in the 1880s, but did not start on a grand scale before the 1920s.

THE ROYAL UNIVERSITY LIBRARY IN OSLO TODAY

The library suffered some damage during the years of German occupation in the Second World War. An explosion in the neighborhood shook the building, but nobody was wounded and no valuable items of the collections were lost. After the war, the library experienced the same strong growth as other libraries in the world. The number of students in Oslo doubled some six or seven times and the number of teachers increased in proportion. In addition, other teaching institutions were being founded at other places in the country, which were to a large extent dependent on the Oslo collection.

What proved to be of great consequence, however, was the move of the university to a new site outside the city. A few institutes belonging to the faculty of science were already there, but in 1951 it was decided that all future university activity was to be concentrated on the new campus. The first part of the process took some 20 years to accomplish. Among the planned institutions which have not yet been built is the new university library. For this reason, it has been necessary to organize a new, decentralized library service within each of the seven faculties. The result has been an improved coordination of the resources in the main University Library (2,200,000 volumes) and the more than 100 institute libraries (total number of volumes about 1,000,000).

The University Library has 10 administrative sections in the main building and seven faculty departments. It has three functions:

1. Library of the Oslo University
2. National Library of Norway
3. Main reference and lending library of Norway

In its capacity as university library for Oslo University, the library is charged with ensuring a full coverage for studies in theology, law, medicine, humanistic studies, science, dentistry, and social sciences.

The responsibility as national library implies not only the housing and preserving of everything printed in Norway, but also of as much as possible of what is published by Norwegian authors abroad and by foreign authors about Norway in general. There are, at present, special collections of some Norwegian authors such as Holberg, Ibsen, and Bjørnson, and of special features such as emigration to America.

The Norwegian department is the center of the national bibliographic activity. The manuscript collection includes many thousands of manuscripts, letters, and personal documents of Norwegian authors, artists, scientists, and important politicians. Whole archives of various institutions and societies serve research purposes which help to gain insight into the political, economic, and cultural development of the country.

One part of the national collections also contains documents from and about the Second World War: clandestine literature, German publications produced in Norway, Norwegian publications printed abroad, and publications by foreign authors about Norway at war. Other important departments include Norwegian music, pedagogic publications, map collections, incunables, papyri, an East Asian collection, and the collection on the history of the theater.

It is only natural, because of the broad subject coverage it ensures, that the library has to serve as the main research library for the whole country. In this capacity it takes care of lending materials and supplying bibliographic information. Even though new scientific and technological libraries sprang up in the course of time, the University Library of Oslo remains the main source of information. Its services are increasing in variety and number.

Union catalogs of foreign books and journals in the approximately 400 research and special libraries throughout the country were first started in 1939. They have since been kept separately for journals and serial publications on the one hand, and for monographs on the other. The first union catalog appears in print in four sections, brought up to date every other year. The other exists, at the moment, only as a card catalog. The cards will be photographed and microfilm copies will become available for distribution in the near future.

The University Library of Bergen

The University Library of Bergen is based on the Bergen Museum. It was founded in 1825 by a small group of civil servants and citizens from Bergen. As scholars they were all amateurs but aspired to lofty goals. They belonged to a generation who a few years earlier had restored the independence of their country. It was natural that their interest was centered in their Norwegian nationality, while attempting to find the missing links connecting the present with Norwegian history at the height of its glory in the Middle Ages. The founders wanted to build a museum which would contain all available information on the nature, language, history, and culture of Norway. But they had no clear conception of the existence of a national Norwegian literature and the importance of preserving it. The library of the museum grew slowly and as a sort of secondary interest. When a new public library was founded in Bergen in the 1870s, fiction and the main part of the humanistic collection were transferred to it. The library of the Bergen Museum got its first librarian in 1890. The collection still numbered less than 30,000 volumes 10 years later. As mentioned above, the library was entitled, by the law of 1939, to receive a deposit copy on request.

The library started to function as a university library in 1948 when the university was founded in Bergen. It had at that time some 250,000 volumes, with the best coverage in science and archaeology. After 1950 its growth was rapid. A new building was raised in 1961, donated by the shipowner and former prime minister, Johan Ludwig Mowinckel. Entirely new dimensions were reached which made possible services for the university and for several research and teaching institutions not only in Bergen, but in all other parts of the country.

The University Library of Bergen possesses at present about 750,000 volumes and 9,000 current journals covering science, humanistic studies, medicine, dentistry, law, and the social sciences.

The University of Trondheim

In 1900, the Norwegian Parliament decided to open the first technical college in the country, which was ready for admissions 10 years later. The library was started in 1912 but it only became operative in 1920 when a professional librarian could be employed. After the Second World War its growth was very rapid. At present it has about half a million volumes apart from considerable collections of patent and standard specifications, commercial literature, etc. It has developed an active information service and is in contact with important information centers all over the world. Functioning as the main library of the Norwegian Institute of Technology, it is the main technical library for the whole country, serving both the industry and the governmental administration.

When the University of Trondheim was founded in 1969, the Library of the Norwegian Institute of Technology was incorporated in it. It was organized as a part of the university library system and was assigned the title of Section A.

The other part, Section B, consists of the joint collections of the Royal Norwegian Society of Science and Letters (see above) and the collections of the Norwegian Teaching College. The society's library gradually was reduced in the 19th century to provincial status, with collections that mostly covered science, archaeology, and general history.

Some valuable donations were received, but these were not sufficient to secure a planned accession. Nor was the library given the task to serve as the library for the Norwegian Institute of Technology or for the Norwegian Teaching College which was opened in 1922. The importance of the library increased, however, in 1939 when it was granted the right to receive deposit copies on request. It became the main research library for northern Norway. Nevertheless, its acquisitions were casual, to a large extent donations, exchange publications, and free copies.

The big change came in the 1960s. The planning of a university in Trondheim also resulted in the demand for better library service. The society's library now became the natural kernel of the new university library. It was given considerable money grants and the acquisition of literature was extended to new fields. At the same time the library at the Norwegian Teaching College, some 80,000 volumes, was attached to this section of the university library.

The University Library, Section B, has at present half a million volumes plus collections of filmed newspapers, music sheets, manuscripts, and other material. It is responsible for the supply of literature in humanistic studies, social sciences, biomedicine, science, and art. The library building itself was added to for the third time in 1975, while an entirely new building is being planned on the new university campus outside the city.

The University of Tromsø

The University of Tromsø was founded in 1969, the same year as that in Trondheim. But, while some research institutions existed in Bergen and Trondheim, Tromsø had much smaller resources to draw upon. There were only about 20,000 inhabitants in Tromsø and the scholarly institutions consisted of Tromsø Museum, for archaeology, ethnology, and natural history; an auroral observatory; two hospitals; and an agricultural research station. There were about 100,000 volumes on archaeology, Lapp ethnography, zoology, botany, and geology. The decision to found a university in Tromsø was largely political. The government felt that northern Norway was entitled to better access to higher education, and that research concerned with local scientific subjects should be conducted locally.

Relatively large grants enabled the library to begin functioning within a comparatively short time, while a longer period will undoubtedly be needed to establish adequate library service for a university which covers medicine, science, humanistic studies, and social sciences.

The Library of the Agricultural College of Norway

Advanced agricultural education was started in 1859 and a library followed in the wake of it. In the beginning no more than a modest institute library, it grew in size from 1900 onward. The library was charged with supplying relevant literature for agricultural studies for the whole country somewhat later on—because the University Library of Oslo could not possibly aspire to a full coverage in that field, and the main part of all agricultural research was to take place at the Agricultural College of Norway some 30 miles away from Oslo. The library grew considerably in size during the last 20 years and has at present some 350,000 volumes covering—besides agriculture—economy, social planning, ecology, architecture, and local history.

Other Libraries

Besides these large libraries, there are about 300 comparatively small research and special libraries in Norway which together cover most of the specialities. The majority are state libraries, some connected to institutions and institutes financed by combined local and state grants, and a few privately owned. They are all organized on the same principle—as an integral part of a university, a state office or agency, a hospital, a laboratory, or some other institution.

LIBRARY COORDINATION

The collaboration among libraries and the coordination of their future development became one of the many concerns of the director of the Royal University Library of Oslo in 1958 when his duties were enlarged to include serving as a state consultant on matters connected with research and special libraries.

Starting from the year 1969, this responsibility was shifted to the newly created office of the national librarian, who presides over the National Office for Research and Special Libraries. The national librarian and his staff act as advisors to both the governmental authorities and the individual libraries. They conduct the planning and development of a coordinated library and documentation system and of a national bibliography, take part in the building up of documentation services, and support research in the field of libraries, documentation, and information services.

PUBLIC LIBRARIES

The first public libraries in Norway were opened in the period of enlightenment in the last years of the 18th century. Interested clergymen and civil servants tried to build up collections of useful and instructive literature in the various parishes. The idea was to make literature accessible to the general public in order to help them in the practical concerns of their daily life on the one hand, and with improved knowledge in the Christian faith on the other. The book collections therefore consisted mostly of agricultural and religious literature. Another wave of enthusiasm for popular enlightenment swept the country 40 years later and was furthered mostly by clergymen, teachers, civil servants, and politicians. Henrik Wergeland, the great Norwegian poet and national spokesman, was one of them. The third and most productive wave came toward the end of the 19th century and was due mostly to outside influences. Norwegians who had been to the United States of America saw the mighty progress of the public libraries in the second half of the 19th century. Returning home, they carried the idea with them, and this resulted in Norway rapidly becoming the leading country in the north in that respect. The public library in Oslo was reorganized after the large donation of Carl Deichman in 1780; the public library in Bergen was modernized, and several others were built in the style of the American Carnegie libraries. A great many Norwegians studied in American library schools and Melvil Dewey's views dominated the Norwegian profession until the Norwegian library school was founded in 1940.

The reorganization of the capital's public library, the foundation of public libraries in many other towns, and the creation of an office of consultant for public libraries were the main incentives for the growth of public libraries. The office of the consultant was a part-time job at the beginning, but became in due time a whole agency—the State Library Directorate for public and school libraries, presided over since 1949 by a library director. The state authorities evaluated the whole question of public libraries in the years 1919–1920, but it was only in 1935 that Norway passed a law regarding public and school libraries. The difficult years of the world economic crisis were the reason why public libraries had to wait and why, even after 1935, no binding decisions on their size, grants, or standards could be reached. Two later laws, passed in 1947 and 1955, respectively, replaced the 1935 law. The 1947 law decreed that every community and every school should have an organized library and should to that purpose receive a minimum sum from the local government. The state supplemented these grants with certain sums of money. County libraries, a part of the public library system, had to take over special responsibilities for larger administrative sections of the country and received special state grants for that purpose. The law was important for the principles it set down rather than for the improvement of the economic situation that it tried to accomplish.

Rising prices and larger demands on public libraries made it necessary to increase the grants set down by a new law passed in 1955. However, it soon became evident that the postulate of a democratic government reaching right down to the smallest administrative units, the need for a better education at all levels of the system, and the access to cultural benefits in all parts of the country could not be met by public libraries out of the budgets which the law provided. The most recent law, of 1971, ensured above all better working conditions for the library personnel by settling larger state grants on public libraries. The system at present is based on libraries financed jointly from the local and governmental budgets. A minimum sum per inhabitant has to be spent locally on the public library, while the state contribution depends on the size of the local grant. Municipal units above 8,000 inhabitants have to employ a professionally trained librarian. The state controls the functioning of the library. All counties have to have at least one county library which supports and supplements the collections of the municipal libraries. There must be a library attached to every school in the country.

The Directorate for Public and School Libraries functions as the highest planning, coordinating, and controlling body for all public libraries and for all school libraries attached to primary and secondary schools.

The economic crisis in Norway in the 1920s and 1930s influenced and delayed the development of the public library system to a great extent. The peculiar conditions in the country, where a comparatively small population is spread over large areas, also make an effective network of public libraries a costly procedure. Nevertheless, it is correct to point out that the public libraries now have come into a new and expansive phase of development.

The largest public libraries are:

Oslo: Deichmanske bibliotek; founded 1780, 30 branch libraries, 1,100,000 volumes.
Bergen: Bergens offentlige bibliotek; founded 1875, 22 branch libraries, 470,000 volumes.
Trondheim: Trondheim folkebibliotek; founded 1902, 15 branch libraries, 235,000 volumes.
Stavanger: Stavanger kommunebibliotek; founded 1885, two branch libraries, 210,000 volumes.
Tromsø: Tromsø kommunale bibliotek; founded 1871, five branch libraries, 160,000 volumes.
Kristiansand: Kristiansand folkebibliotek; founded 1909, seven branch libraries, 160,000 volumes.

GERHARD MUNTHE

NOTTINGHAM PUBLIC LIBRARIES

In September 1863, at a meeting of the Nottingham Naturalists' Society, a resolution was passed to seek information concerning free libraries from such libraries already in existence. The society in October of that year called on the town council to call a meeting to adopt the Free Libraries Act of 1855. The mayor, however, said that in his view "the time was unfavourable to the movement" and recommended the postponement of such a meeting.

In 1866 the Artizans' Library in the town was in financial straits, and its committee offered its books to the town on condition that the council also take over its liabilities. After a ratepayers' meeting, at which the implications of the Free Libraries Act were explained to objectors, petitions were submitted to the council by citizens in favor of a fully public library. On the adoption of the Act, in 1867, the town took possession of the Artizans' Library, and also of the collection of the Naturalists' Society, which had, as already related, been the earliest advocate of a Nottingham Free Library.

This establishment opened its doors on April 13, 1868, in Thurland Street, Nottingham. Four hundred people, "chiefly of the artizan class," applied for membership on the first day. The library consisted of a Lending Library and a Patent Library, and was staffed by the first librarian, John Palmer, assisted by a sublibrarian and a boy. The first *Annual Report of the Free Library and Museum Committee* records that Mr. M. I. Preston, a former sheriff, had presented over 100 volumes on local history, early evidence that the massive collections in Nottingham were taking shape at the very beginning of the service. The committee pointed out that, although the service had been established in a limited way in the old Artizans' Library premises, they recognized that for it to be effective it must also provide a reference library, with reading and newsrooms.

In 1869, the committee dismissed the librarian, John Palmer, "in the interests of the institution," and appointed Mr. J. Potter Briscoe of Bolton, who was to hold office until 1916.

By 1870 the library had become the fifth largest, in terms of books issued, in the United Kingdom; and another important step was taken in the laying down of the nucleus of a reference library, with its hours extended to late evenings. Within a year or two more, the increased use made of the library was causing reference to overcrowding in the building, a theme which continued almost uninterrupted ever after then. The earliest extensions of the service came about with the opening in 1875 of a reading room at Carter Gate. This was succeeded 3 years later by one at Hermit Street, Sneinton, which had been incorporated into the borough in 1877. At the extreme northern end of Nottingham, a reading room was also opened at Bulwell.

The civic awareness of the time resulted in a decision to build a complex which was to comprise the Central Library, University College, and Natural History Museum. The site was the Horse Fair Close a little to the north of the town center. The committee reported that the new premises would allow for two reading rooms, one of which would be for the use of women. This splendid neo-Gothic building was opened in June 1881, with a Lending Library and News Room on the ground floor, and the Reference Library and Reading Room on the floor above. There exists in Nottingham to this day an impression that the premises were originally devoted entirely to the University College, but in fact the Central Library was from the inception an integral part of the building. The bookstock amounted by this time to about 25,000 volumes. The *Nottingham Daily Express* greeted the library as an instrument of power, "for if, to the individual, knowledge is power, what must it be to a community of 180,000 individuals?"

Early efforts were made to establish a really authoritative reference stock and to set up local collections such as those devoted to Byron and Robin Hood, as well as almost-forgotten figures like Philip James Bailey, and William and Mary Howitt.

A most important development occurred in 1883, when the first separate library in England for children was opened in Shakespeare Street, about 100 yards from the Central Library. The Liberal Member of Parliament, Samuel Morley, had offered £500 as a contribution to a library for children on learning that the main library was accessible only to those who were age 15 or older.

The 1880s reflected a steady growth in the library service and saw the opening of reading rooms in The Meadows and at Carrington, and branches at Lenton, New Basford, Old Basford, Hyson Green, and Bullivant Street. This latter library was replaced a year or so later by a branch at Dame Agnes Street, which was in the heart of what became Nottingham's celebrated, or notorious, St. Ann's redevelopment area. A reading room at Radford followed in 1892.

Nottingham was one of the first libraries to cater for the blind reader, and it entered the wider educational field with its "Half-hour Talks" scheme in 1892, when literary evenings were held at the various reading rooms. The earliest branch libraries in the sense that we recognize them appeared at the beginning of the 20th century. Carlton Road Library, a very large and commodious building, was opened in 1901 as a reading room with provision for further future facilities when needed. Hyson Green Reading Room opened in 1896, and developed into a lending library in 1903, with a children's section 4 years later.

The Carnegie United Kingdom Trust began to play a part in the future of Nottingham Public Libraries from about this time. Nottingham had asked for money either to build a new Central Library, the 1881 building already proving inadequate, or to construct four new branch libraries. It was felt that for Nottingham new branches would be more desirable, and so a program of branch planning was set in motion.

In 1907, the committee reported that they had decided to develop considerably the work of issuing books to the scholars of the city through the central Children's Library, four branch libraries, and two delivery stations. From these modest decisions sprang the well-stocked school libraries which were taken for granted in later years.

The 1908–09 *Annual Report* contains a remark which has already been commented on, and which will have to be noticed many more times: "The accommodation at the Central Library is very inadequate, and there is a pressing need for a more extensive building." As if this were not pointed enough, the *Report* for 1910–11 emphasized "the absolute necessity of further accommodation." This report reviewed the services currently given by the Nottingham libraries; these were:

7 Lending Libraries with over 80,000 volumes
2 Book Delivery Stations
12 District Reading Rooms with Reference Libraries
3 Central Reading Rooms in Sherwood Street
1 Central Reference Library with 45,747 books
5 Boys' and Girls' Lending Libraries and Book Delivery Stations, with which more than 70 schools, and over 5,000 scholar-members, were connected.

By 1912 the establishment of four new branch libraries was recommended. These were to be at Bulwell, Basford, Sneinton, and The Meadows; and £15,000 was promised by Mr. Carnegie for this purpose. A combination of circumstances, including of course the First World War, was to delay the building of any of these libraries until the 1920s. However, in 1915 the lending library at Carlton Road was reopened as the first open-access lending library in the city. Open-access made further strides with conversions at the Eastern Library on Dame Agnes Street later in 1915, and in the following year at New Basford and the Central Boys' and Girls' Library on Shakespeare Street.

In December 1916, J. Potter Briscoe, who had been in charge of the library service virtually since its beginnings, resigned owing to ill health, and was appointed consulting city librarian. Mr. Briscoe had taken great interest in local affairs and Nottinghamshire history, and several books of anecdotal local history were compiled by him. He also wrote volumes on freemasonry, and collaborated with W. T. Pike in *Nottinghamshire and Derbyshire at the Beginning of the 20th Century: Contemporary Biographies*, a work which is still of great value to the Local Studies Library. Mr. Walter A. Briscoe, son of the retiring librarian and at that time deputy city librarian, was appointed in his place.

During this year the library was looking forward to peace, and to encouraging the return of prosperity, for we read in the *Annual Report* for 1916–17 that a feature had been made of material "calculated to assist manufacturers and merchants in the capture of German trade . . . . works dealing with after-war commerce and industries . . . , and provision of works on Industrial Science generally." It is interesting to see how closely the library service was identifying itself with the aims of the community as a whole.

The Nottingham Public Library celebrated its Golden Jubilee in 1918, and in a publication of the Public Libraries Committee, *Nottingham Public Libraries: Fifty Years 1868–1918*, reviewed its past record and examined its present state. Much of the foregoing material has been taken from this useful pamphlet. The inception of the Local Collections and the Reference Library has been recorded under earlier years, but 1918 saw mention of two other central core collections for which Nottingham became celebrated. These were the Commercial Section in the Reference Library, "which recent development will be of service to local business people," and the Nottingham Photographic Record. To create the basis for this collection, a public request was made for gifts of photographs, and the library was able to report that a large number of valuable photographs had been presented.

In 1920 the committee reported that the Commercial Section was an appreciated innovation, and that it had been decided that a Technical Library should be formed for the use of scientific and technical societies in Nottinghamshire. The Reference Library had, it was said, earned the reputation of being the Information Bureau of the city and county, and the Local Collections had been extended, with sections on Kirke White and the Pilgrim Fathers becoming known features. The Photographic Record and Survey was also gathering momentum. The year 1921 saw another library go over to open-access, when Hyson Green was modified to allow this development. The following year was notable for an extension of the service to schools, with a Joint Committee of the Education and Public Libraries Committees being set up to formulate a scheme for providing schools with books. As a result of this, 30 school libraries were set up.

The Branch Library building program at last got under way in 1923, when the foundation stone of the Northern Branch at Bulwell was laid. Financial help had been received from the Carnegie United Kingdom Trust, and perhaps more surprisingly, from the Miners' Welfare Committee, who also offered to help with cash for the projected Radford–Lenton and Basford libraries. This availability of money for branches in particular localities had an influence on the pattern of library provision in the city, with the result that a populous district like Sherwood received no purpose-built library until the late 1950s. In 1923 the committee, again returning to their perennial theme, regretted that it was impossible to convert the Central Library to open-access operation as space was so restricted due to the Lending Library sharing its premises with the News Room. However, things were better on the branch library front; the Northern Branch was opened in 1924, and the Southern Branch Library, in the Meadows district about 1½ miles south of the city center, followed in 1925. The next 2 years were marked by two more branches, at Basford and at Radford–Lenton. All four buildings featured the typical "Carnegie Library" entrances, and all reflected the period's desire for some slight stateliness or monumentality in architecture. The Southern Library, indeed, sports a semicircular portico and a lantern. Most of these libraries are, however, since modernization, pleasant places for staff and readers. They were open-access from the start.

The end of the 1920s was marked by lengthy discussions on the problems of the Central Library, ending with a decision to add an extension to the 1881 building. The number of schools with permanent libraries had meanwhile risen to 78.

The *Annual Report* for 1931–32 was naturally full of the Central Library extension, which was under way at the time, but some interesting incursions by the library into the wider community were noted. Loans had been made to Boys' and Girls' Clubs, and to young people on probation. Discussions had also taken place with a view to extending the library service to Aspley, where a vast council housing estate was being built, and to Sherwood, which was a long-established residential area. Understandably, perhaps, at that time of activity, it was decided that the provision of these branches should be deferred.

The new wing of the Central Library was opened in 1932, and at long last the Lending Library was able to work on an open-access basis. Opportunity was taken to develop the Reference Library as a Study and Research Section, and the Patent Library was rearranged. The Local Collection, which had by then over 3,000 items in its Photographic Survey, was reclassified, and the Boys' and Girls' Library was brought into the enlarged Central Library from its outpost across the road in Shakespeare Street. The new wing was occupied by the Lending Library, with the Reference Library Reading Room above it. It is a pity that the provision of a spacious basement made it necessary to raise the floor levels of the new wing, so that from that day to this it has been impossible to push a trolley of books from one end of the ground floor to the other. The committee, in its first *Annual Report* after the opening of the Central Library extension, took the opportunity of stating its philosophy of a library service in no uncertain terms. The committee wished to "stress the point that the work of the Public Libraries cannot be valued on a monetary basis, but on its value in educational and social service to the City . . . providing the means for profitable leisure to thousands of workers and unemployed citizens at an average cost per annum of ¼d per head."

On January 1, 1935, Mr. Walter Briscoe, who had died in office at the age of 56, was succeeded by Mr. Duncan Gray, formerly librarian of St. Marylebone, London. Mr. Gray had virtually created the library service in St. Marylebone and had earlier done similar pioneering work as county librarian of Warwickshire. The *Annual Report* of 1935–36 was in many ways a significant one. Mr. Gray had instituted a thorough-going survey of the services given by the library. The equality of services provided at each District Library was assessed, and compared with those available at the Central Library. The survey reported that close attention was being paid to the additional services and buildings which were needed, but pointed out that the present financial provision was inadequate. There were developments, however, with the first loans of books to local mental hospitals and, in 1936, the opening of the Music and Drama Library at the Central Library.

The Aspley Branch Library was opened in November 1937 and achieved immediate recognition as a notable example of branch building of the time. It is a very spacious library, set on the edge of the housing estate, rather than in its center where it might have been more effective, and is unmistakably a product of the functional modernism of the years just prior to the Second World War. The war, of course, was the dominant feature in the years to come, although Carlton Road was modernized in 1937, and extensions to Hyson Green were made in 1938. In that year also Mr. Gray approached the University College and was instrumental in getting classes in librarianship started there. At this time Nottingham became a Library Association Examination Center. Both of these developments reflected Duncan Gray's desire for high standards in librarianship, and for these standards to be recognized.

The war made any very extensive developments out of the question, although the libraries were very heavily used. Some idea of the spirit prevailing then may be gained from an account of an air raid in 1941–42, which badly damaged the College Building adjacent to the Central Library and demolished part of the library roof, blowing out nearly all its windows. "In spite of this, however, the service was not halted for a minute." During that year the old Central Lending Library counter had proved to be such a bottleneck that a new one was provided which completely did away with the congestion. It was typical of the times that the new counter was made either from parts of the old one or from other discarded library fittings. The war years also saw the beginning of a recataloging of the Reference Library, and for the first time mention was made of the Archives Section. Manpower problems were a permanent factor at the time, with many of the staff serving in the Forces.

The 1944–45 *Annual Report* was able to take a much broader view. The end of the war in Europe had caused the committee to examine the previous 10 years, in order to plan the future needs of the service. This *Report* showed that between 1935 and 1945 the bookstock had risen from 175,000 to 339,000, that the membership had increased from 28,000 to 63,000, and that the number of books issued had soared from 896,000 to almost 2,400,000. The net cost of the service per annum had also risen, inevitably, from £22,000 to £31,000. As a result of the forward planning which had been done, it was revealed that the committee hoped to build new branch libraries at Sherwood, St. Ann's, Broxtowe, Bilborough, and Wollaton, as soon as labor and materials became available. The first full year of peace enabled the committee to consider its future requirements in greater detail. The chief decision was yet another echo of the cry which had been made some 70 years earlier, and which was still to be heard to the end of Nottingham Public Libraries' separate existence. This was that, as the College of Technology intended to extend their premises to take in the ground now occupied by the Central Library, necessary steps should be taken toward the building of a new Central Library as near as possible to the existing one. Another major decision was to formulate two 10-year branch building programs, to include, in addition to the libraries already mentioned, branches at Dunkirk, Wilford Road, Bestwood, and Beechdale Road.

As a start to this provision, three temporary libraries were opened in 1947. Those at Bestwood and Broxtowe were in the premises of the Social Welfare Committee, and the Sherwood subbranch was a screened-off part of a local Methodist Church. The first two of these "temporary" libraries were still in use in March 1974. In 1949 a temporary branch was opened at Bilborough; this was an interesting venture as the buildings used were former cowsheds at the Old Park Farm, and made a surprisingly charming library. The possibility of a mobile library for the city was first discussed during this year, and the library was much involved with exhibitions connected with the Quincentenary of the granting of Nottingham's Charter of 1449, including a special exhibition of charters and other archives of the Corporation of Nottingham. Shortly after this, Miss V. W. Walker, reference librarian since 1932, was appointed archivist so that her full attention could be given to the large manuscript collections of the corporation, and of the Reference Library. The first loan collection of books to Nottingham Prison was made in 1950; a proportion of these were changed quarterly to achieve freshness of stock. This was another small step in the extension of the library service; the 1950s were also to see the appointment of a librarian with special responsibilities for book provision at the prison and at local hospitals.

The first year of the Archives Department under a full-time archivist saw over 100 items consulted by researchers and students, and the enormous task of repairing, classing, and arranging the borough archives was continued. By the end of the library's independent status, the City Archives, with the Local History Library, was to constitute a resource center with a worldwide clientele.

In December 1950, Mr. A. C. Panter, who had been appointed deputy city librarian earlier in the year, died at the age of 36, and was succeeded by a man who was to have a great influence on the future course of Nottingham Public Libraries. This was Mr. Francis Charles Tighe, deputy librarian of Paddington. The following year was notable for the closure of the Carrington Reading Room, which provided no library facilities, and the *Annual Report* remarks on the decline in the use of newsrooms throughout the city, and the consequent reduction in the number of newspapers stocked by the libraries. Steps were also taken in 1951 to form a separate Commerce Library in the Central Library, part of the main Newsroom being taken over for this purpose. The Patent Collection was joined by a large number of directories and periodicals. These two very different events, the closing of a newsroom and the concentration of the commercial materials, were significant signs of the times, and an indication of the way in which the service was to develop.

Duncan Gray retired in March 1953 and was succeeded by Mr. Tighe. His had been an influential period of office, sadly interrupted by the war. Mr. Gray left his mark not only in the improvements he had brought about in the library service, but in the due recognition he had given to the City Archives. His books are still read, as—quite apart from manuals on librarianship—Mr. Gray wrote *Nottingham through 500 Years* and *Nottingham, Settlement to City*, which are still required reading for many students of local history.

The city boundaries had extended enormously with the acquisition of land south of the Trent for the building of the Clifton housing estate, and in 1953 the first of three libraries which successively served the area was opened. This was a small prefabricated wooden hut near the old village of Clifton. Thus began a remarkable series of building achievements in Mr. Tighe's time. The next (and equally modest) step was the removal of the wooden hut to the very center of the Clifton Estate. This was followed by the construction of a temporary, but still extant, branch library at Western Boulevard, opened in December 1956. These events were, however, overshadowed by the opening in July 1957 of the Sherwood Branch Library, proposed 40 years earlier but postponed time after time for a variety of reasons. This library included one feature which was not repeated in Nottingham, being built over a row of shops in a busy suburban shopping center. The library was an immediate success and demonstrated how badly it had been needed at Sherwood.

The building program continued with a small "temporary" library at Wilford in 1959, and a handsome, modern, medium-sized branch at Bilborough. This library is in a large postwar housing development and replaced the accommodation in cowsheds at Old Park Farm. In April 1960, the largest branch yet in the Nottingham system was opened. This was the new building at Clifton, superseding the wooden huts which had done duty for several years. Clifton Library carried a stock of some 20,000 volumes, with a substantial reference collection, reflecting its distance and comparative isolation from the rest of the city. In 1961 there followed a small library at Bakersfields, and in June, the Wollaton Branch, which replaced a makeshift service which had operated since 1943. The Wollaton Library was a very pleasant, modern, single-story building arranged around a patio, and with the Sherwood and Clifton branches was one of the three busiest in Nottingham. These three libraries made an enormous difference to the standard of provision in the city, and all were milestones in Nottingham's library history. Although opinions varied on the value of a policy which concentrated on the building of branch libraries in large numbers, the expansion of the service achieved in these years stands as a tribute to the work of Mr. Tighe and the committee at a time when money was never over-plentiful.

Hand-in-hand with these branch library developments, much was happening at the Central Library. In 1957 the important decision was taken to reorganize the administration of the Reference Library and to create two new departmental posts. This reflected the growing importance of the central collections and divided the former responsibilities of the reference librarian. There were thus three departments run independently of each other: a Commercial and Technical Library, a Reference Library, and a Local History Library. With the appointment of a trained assistant archivist, the resources held at the Central Library were being brought into greater prominence, and greater exploitation of these stocks was made possible by the increased provision of experienced staff. During the next few years the Commercial and Technical Library became the administrative headquarters of the Nottingham and Nottinghamshire Technical Information Service. NANTIS, which was established in January 1963, serves local business and industry by coordinating the information resources of firms, organizations, and libraries in the area, drawing on these and other sources to provide an efficient enquiry and lending service to its members, currently (1975) numbering more than 70. At the same time, the Local History Library received a major addition to its source material with the bequest of the W. E. Doubleday index. This is a card index containing at the time of its donation some 300,000 entries on Nottinghamshire, compiled by Mr. Doubleday, a former member of the Nottingham library staff who had had a distinguished career as a librarian in London. The Archives Department had by 1963 grown substantially and contained over 15,000 records.

During these latter years the Central Lending Library, too, had been changing its character. In 1957 gramophone records were first issued, and with the main brunt of leisure and recreational reading being borne by the increased facilities at the branch libraries, the Central Lending Library began consciously to offer a more specialized service than before, concentrating much of its resources on supplying material which was not readily available on branch library shelves. Not surprisingly, the Central Library building was again proving unequal to the demands placed upon it, and there were proposals, never acted upon, to move out the Children's Library to temporary accommodation nearby; there was even talk of erecting a small building outside on the lawn for this purpose.

In July 1964 Mr. Tighe died suddenly in his late forties, and was succeeded by Mr. David Gerard, the deputy city librarian, who had come to Nottingham from Exeter in 1957. Many tributes were paid to Frank Tighe, both locally and in the professional press, and his death at the full height of his powers was deeply felt.

The year 1967 saw the first Mobile Library to run in Nottingham, serving districts in the city remote from libraries. Rather than making a series of short stops, the Mobile Library went each day to a different location and remained there throughout opening hours, providing, in effect, a one-day-a-week branch library service in several areas. In 1967–68, book issues passed the 3 million point for the first time in the history of Nottingham Public Libraries. This was an appropriate feat to mark the centenary of the service, which occurred in April 1968, a few days after the issue figures were calculated. Exhibitions and displays were mounted to celebrate the event, with a pictorial exhibition illustrating the growth of the system, and a library scene of 1868 in the Central Lending Library. The Mobile

Library stood in the Old Market Square enrolling new readers, and the city librarian produced a brochure *A Reading Public 1868–1968*, which summed up the chief achievements of the 100 years and which, with the Golden Jubilee pamphlet of 1918, provides a valuable picture of the library's history.

Mr. Gerard resigned in 1968 to take up a post at the College of Librarianship, Wales, at Aberystwyth, and Mr. Paul Sykes, director of libraries and arts services at Rochdale in Lancashire, was appointed to take his place. Mr. Gerard was, by the way, the first chief librarian in the history of Nottingham Public Libraries to resign voluntarily in order to take up another professional post.

Mr. Sykes immediately began to prepare a series of reports on various aspects of the library service, covering the establishment of the libraries and the use of manpower, the Branch Library development program, management of book fund and bookstocks, and the revision of administrative procedures. Reports on the staffing of the department and the rationalization of services to the public were acted on in 1970 and 1971. A group structure was created for the Branch Libraries, and five Central Divisions were established. Instead of 18 branches, each with their own allotted staffs and rigid bookstocks, the libraries were grouped into four areas, each with a professional team with special responsibilities throughout their group. The result was improved flexibility of operation; movement of bookstocks; revision of opening hours, which ensured that readers always had at least one library open in their district; and greater opportunities for identifying and attaining objectives. In the Central Library, the Central Lending Services Division, in addition to operating the Central Lending, Music and Drama, and Children's Libraries, was responsible for services to Nottingham Prison, Old People's Homes throughout the city, and similar ancillary provision. The City Archives and Local Studies Division brought together under one control all the local history material in the library, and the Reference and Information Services Division coordinated the work of the Reference, and Commercial and Technical Libraries. The School and Junior Libraries Division had responsibility for all services to children throughout the schools and libraries in Nottingham, and the Stock Control Division took over the ordering and cataloging of books, arranging with suppliers the servicing of new books before delivery.

In 1972 the St. Ann's Branch Library was opened in the middle of the huge, new St. Ann's housing redevelopment area. This was Nottingham Public Libraries' last new building, as in October 1972 the Local Government Bill was passed, giving county councils the major responsibility for library services. In 1973 Mr. Sykes left the authority upon his appointment as director of recreation for Blackburn, and for the final few months of its existence the Nottingham library system had an acting city librarian, Mr. N. B. Buchanan, who had served in Nottingham since 1937, first as branch superintendent, and then as deputy city librarian.

The statistics in the final *Annual Report* show the bare bones: bookstocks of almost 550,000, and over 2½ million books loaned to more than 84,000 readers. What figures could not show were the depths of the collections in the Central Information departments; the international reputation of the Local Studies Library, with its notable collections on D. H. Lawrence, Lord Byron, and Robin Hood;

and the great scope of the records in the City Archives. Besides the Central Library and the Branch and Mobile Libraries, books were reaching residents in Old People's Homes, men in Nottingham Prison, children in all the city's schools, and housebound people. The service, throughout its 106 years, was the story of each generation laying down a foundation for the next one to build on, and the reading public and library staff of 1974 owed an incalculable debt to the foresight and judgment of earlier years.

STEPHEN J. BEST

NOVELS*

In the sense used here, a novel is a lengthy work of fiction with considerable complexity of plot in which the human condition is explored in a fashion more or less true to life. This definition covers all the extensive and popular forms of fiction, such as science fiction and detective stories, as well as the works that are now regarded as part of the literary heritage of the world. It is quite useless to try to determine which was the first novel, especially if *The Satyricon* by Petronius is excluded, and it is not possible to fix the locality of the novel, since the Chinese novels of the Ming Dynasty have recently been translated. In any case, the first highly influential novel in modern Europe was *Don Quijote* by Cervantes. The first part, published in 1604, was instantly popular, unlike *Persiles and Sigismund*, even receiving the approval of the Spanish clergy. This precedes by some 40 years the first use of the word "novel" in English to mean a work of fiction. It is derived, ultimately, from the Latin word *novus*, an adjective meaning "new."

The following survey is not meant to be a history of the novel but rather a review of what novels have come to mean to libraries in building their collections. Many novelists and novels enjoyed by large numbers of readers are omitted not as judgments of importance but because the novelists, or their work, are not needed as examples. The art of the novel, as this article attempts to explain, has given rise to an enormous literature of which the novels themselves are only a part. Just why this is the case can only be suggested by reference to the art of criticism and belles lettres generally. However, no attempt is made to include works of criticism, or the numerous biographies of each of the authors cited and many more of authors not cited. A review assumes that the reader brings to the article his own ideas of novels and their value in a library. The value in information science has yet to be explored.

A further distinction is made by omitting novels that are of a specific type, such as western novels, gothic novels, sentimental (light romance) novels, mystery and

* A list of authors and translators mentioned in the text begins on page 313.

detective novels, and science fiction novels. This was done because this kind of fiction deserves treatment in a separate article, and the peculiar problems that have arisen in library book selection policies do not affect the novels, or novelists, mentioned in this article, except as related to censorship, either official or by the librarians themselves. Such fiction as mystery stories has only recently gained the attention of serious critics, who were possibly bemused by the 19th-century novel. Those novels of an experimental kind, which can truly be said to advance the art of the novel, are not part of popular culture but the form, or style, once established leads to the production of what has been called formula fiction, that is, a novel in which the plot is determined by the characters or by the action, such as adventure stories, mystery stories, and light romance. There are two great periods of the novel, determined less by the novelists than by the increase in the power and technology of communication.

From Defoe through Henry James

Literary experts debate, from time to time, whether the appropriate works of Daniel Defoe may be considered novels in the current sense of the word. It would be impossible to exclude them here because at least one of them has attained the ultimate stage of popularity. Robinson Crusoe is a much more meaningful individual than his creator. Crusoe's story is told and retold in an endless variety of forms and has given rise to a kind of "desert island" plot formula ultilized for children's literature, comedy, and several television series. The story was first published in 1719 under the title *The Life and Strange Surprizing Adventures of Robinson Crusoe, of York, Mariner, Written by Himself.* Defoe's life from his birth in 1660 until his first novel, if it may be called that, at the age of 59 was certainly exciting, including success and failure as a tradesman and the authorship of a periodical, *The Review,* which he wrote single-handedly. He was in and out of prison, pilloried, condemned, and praised in a way that would provide enough incident for several novels. Even his marriage of 47 years and fatherhood of six children who lived to maturity would provide detail for a novelist, as well as the troubled age of Queen Anne and the Hanoverian succession in which he lived.

German critics have referred to *Robinson Crusoe* as a "world book." This represents the popularity of certain novels, as does the fact that Don Quijote and Robinson Crusoe have become more real than their authors, although large collections of the works of Defoe and of Cervantes exist in the British Museum, as well as very imposing collections elsewhere. Don Quijote has further assumed a stage of reality by giving his name to a word, quixotic, from the old spelling of his name, and by having a statue erected to his memory, showing his faithful squire and him, mounted on Rocinante and a donkey, riding off into perpetuity, in front of Madrid's first skyscraper.

Pamela is generally regarded as the first English novel, but there is more than a suspicion that the 19th-century critics who decided to accord Richardson's sentimental heroine the pride of place did so because Defoe's *Moll Flanders* was unsuitable. Pamela is not nearly the character that her admirers wish to make her. She is a servant who is constantly at the point of being seduced by her master, whose passion for Pamela and perseverance in pursuing her are both incredible. She manages to maintain her virtue with such tenacity that her master marries her and becomes the son-in-law of her "poor but honest parents," a state of affairs that leaves Richardson with nothing more to do but point out several morals and lessons to be learned from the story.

This so incensed Henry Fielding, who probably wrote a satire entitled "Shamela," that his first novel, *Joseph Andrews*, is not so much the imitation of Cervantes it started out to be as a kind of male *Pamela*, drawn much closer to life. Fielding wrote only two other novels, although many plays, and one of these is a kind of "world book," although more often discussed than read. *Tom Jones, Foundling* was influential in a way that Smollet's *Roderick Random* and *Peregrine Pickle* never were. Eighteenth-century literature was much franker than the 19th century could endure, and Smollett, though popular and highly regarded in his time, did not create characters who held the imagination in the way that Fielding did. Goethe's *Werther*, granting its immense popularity in German, never became so well admired in English, possibly because no translation could do justice to its remarkable prose. (Even *Don Quijote* had to wait until Samuel Putnam prepared his translation to find an English that was almost the equivalent of Cervantes' suggestive and rich Spanish.) Even the title misstates what Goethe intended by *Die Leiden des jungen Werthers*, because the usual translation, *The Sorrows of Young Werther*, neglects the allusion to the Passion of Christ and the air of confession that the novel was supposed to convey.

Werther, though, is a "world book," especially among German critics, because of its tremendous influence both directly and indirectly on other authors. The whole romantic movement can be traced to Goethe and the popularization of his works that was one of Carlyle's better efforts. Werther dies of Enthusiasm, a peculiarly European, if not German, sentiment that demands fulfillment of an overwhelming desire for the ideal. The excesses of Werther's sufferings are remote from the most popular English works of the 19th century. Thackeray's Barry Lyndon suffers as much or more than Werther, but his suffering is occasioned by bad luck, hard times, and most importantly, his own ignorance, arrogance, immorality, and meanness. *Barry Lyndon* was meant as a satire of the sort of romantic fiction which made a scoundrel its hero, a tradition as old as *The Satyricon*. Cervantes revived this in his picaresque works (*Lazarillo del Tormes* in particular).

Two authors wrote fiction that has since dominated the consideration of critics and achieved equal popularity though for much different reasons. Jane Austen's *Pride and Prejudice* and James Fenimore Cooper's *Last of the Mohicans* have been the subject of plays and motion pictures, and each has been reviewed extensively by historians of literature. Jane Austen achieved something few novelists can claim. Her characters are depicted rather than explained. The reader is left to draw conclusions about each of them, because the author shows the character rather than telling the reader what to look for. Nothing really happens, in the sense of activity, aside from a turn up and down a drawing room to display a figure, but readers of Austen, many of whom are compulsive about their annual renewal of familiarity, perceive something new and different on each rereading, another characteristic of a great novel. It is forever new.

James Fenimore Cooper was the first American novelist to gain a European readership, and if his knowledge of woodsmanship was much less than accuracy demanded, his plots are thrilling and his style highly readable. His most ardent critic, Mark Twain, never succeeded in turning the public from his works, and youngsters still read his novels, especially if they are not assigned in literature classes. Cooper and Hawthorne suffered somewhat from being the only novelists available to historians of American literature, so that some of the enthusiasm for their works seems overdrawn. However, the best of Hawthorne has assumed a position among the other "world books." *The Scarlet Letter* was considered daring in its time, making us willing to forget his lengthy novel *The Marble Faun* and its compulsory Italian setting. Fielding also wrote *Amelia*, and Richardson's lengthy *Clarissa* includes another virtuous heroine who has less plot to roam in.

The Brontës in England, Emily with her single masterpiece *Wuthering Heights* and Charlotte with *Jane Eyre*, begin the period of romantic fiction in a way that Jane Austen avoided and Cooper never attempted. It is difficult to say that Hawthorne really was interested in romanticism, except, as it proved, unsuccessfully. The nearest American writer of similar novels is Louisa May Alcott, whose *Little Women* and *Little Men* soon became standard reading for girls and in the manner of great novels have remained popular even in a period of liberated fiction. The novel-reading public of England and the United States made the great audience that, according to Walt Whitman, assures great poets. The most popular of all novelists was Charles Dickens, whose *Pickwick Papers* began a career of unqualified success up to the point where a train accident spoiled the power of invention that had always sustained him. Invention enables a novelist to fill in details that the outline of the plot does not convey, or even suggest, but which, nevertheless, lend the verisimilitude which makes the rest seem real and believable. Good novels, like good plays, cause the reader to suspend his concept of reality and look at the novelist's world as if it were what he experienced all the time. If the purpose of the visual arts is to improve the power of seeing, then the purpose of the novel is to improve the capability of finding a pattern in the often disconnected events of daily life. In that sense, everyone's life is a novel, but most are badly told with too much incidental detail, so that the ultimate scheme of things cannot be seen for the innumerable side plots and tiresome repetition.

Dickens has not fared so well among modern readers as others, no better than Fielding or Smollet. Though critics acclaim his work now as did the readers of his time, he wrote for a public that had few other sources of fiction: no television series, no radio plays, no motion pictures, and few plays that were not closely akin to enactments of moral truisms. His lengthy books in an elegant language are now hard to read. Yet the characters of Dickens, drawn in such large and often unnecessary detail, are standard in the conception of English literature. Dickens neither admired nor used subtlety in characterization, to the extent that some critics have stated flatly that he is a caricaturist. David Copperfield is trusting, devoted, loyal, and all the minor characters come through much more strongly, a weakness always of novels told in the first person. Micawber and Uriah Heap are strictly speaking minor characters, but each has become a kind of standard against which the personality of an individual may be measured. Dickens is often quoted and more than that, his characters are quoted. The Beadle in *Oliver Twist* declared that " . . . the law, sir, is a ass." The quotation is not only suitable for the character but memorable as well. Quotations from novels are usually taken from the epigrammatic observations of the novelist. The characters in Dickens are quoted like those of Shakespeare.

While Dickens wrote in a way that pleased the 19th-century public, his lengthy descriptions and involved sentences now seem to delay the action and interfere with the characters. He used to go about England and even America giving readings from his novels, which are surprisingly suitable for dramatic recitations. However, he chose the scenes which are most dramatic and least overlaid with the heavy fabric of 19th-century prose. Like all his fellow novelists, major and minor, sexual episodes and feelings are hinted at but never explicitly described. This does not mean that the characters are asexual or inhuman, but the reader is left with the impression that the writers wished to preserve. Good people tolerated sexual activity when it was necessary for legitimate procreation. Erotic stories have been far more common than any other kind and are really the only form of folk prose that remains in common employment, and their absence is noted by modern readers.

William Makepeace Thackeray, after *Barry Lyndon,* wrote many more novels which he published in the periodical he edited, along with the works of other novelists of the time. Serialization has been discussed at length by historians of the novel, but whether it simply forced the author to complete his daily stint, something Dickens found a burden, or caused the plot to assume the character more of a serial than of a novel is difficult to answer. Serials commonly end on a dramatic situation leaving the reader, and later the spectator, with unsatisfied curiosity. A study of the places where the major novels were broken for publication fails to reveal any consistent pattern. The public did not demand the constant titillation of anxiety, because the plot had generated sufficient suspense. *Vanity Fair* was a historical novel and instantly popular because the scoundrel is a woman, and the public was fascinated by Becky Sharp. Such deviations were considered untrue to the major work of the novelist, hence the lengthy works that state the Victorian ideal much more clearly. Like the fascination of Dickens with the lower classes and his efforts at social reform, Thackeray's investigation of the weaknesses of individuals could be forgiven because of the conformity that was elsewhere found. *Henry Esmond,* another historical novel, rings untrue today, almost obviously hypocritical, in its plot where the virtue of a young woman is considered more important that gaining the throne for the Young Pretender.

The public was not always able to decide what was a great novel. Herman Melville's *Moby Dick* made little impression when it was published, no more than *Pierre*, and yet it is now regarded as the greatest American novel by many critics. This leads to the question: what makes a great novel, or better, what makes a novel a great work of literature? In order to recognize greatness, a critic must be able to see the qualities of universality and originality in the light of the future, rather than in the formalities of his own time. Great novels are world books because they appeal to all manners and conditions of people in all ages after their creation. *Moby Dick*, like most of the novels mentioned above, is suitable for rereading in a way that many works are not, however enjoyable they may be initially.

Thackeray's contemporary and the novelist who appeals most to novelists themselves despite his having been classed among the lesser writers by some authorities, Anthony Trollope, lost his readership when he left the placid contemplation of English clerical life in his imaginary county of Barsetshire. *The Warden*, however, remains an enjoyable novel, as does *The Last Chronicle of Barset*. Trollope added another characteristic which explains why the novel appeals to readers in a way that neither poetry nor short stories do. Characters appear and reappear, bringing with them total consistency in their actions and speech. This is most clearly seen in the Palliser novels, Trollope's investigation of political life in the period of Gladstone and Disraeli. The Duke of Omnium and his nephew, Plantagenet Palliser, appear briefly in the Barset novels, but it is the fate of Plantagenet and his vivacious wife, Glencora, that holds the reader's attention. Trollope wrote in a manner that seemed easy, almost glib, without any of the artificialities of Thackeray or Dickens. He was constrained to leave sex to suggestion, and yet there is so much interpretation of character that is positively and undeniably sexual that he reads better than most modern novelists. Trollope, like Jane Austen, was able to convey character, without explaining it, in actions and speeches so fitting the person that if he offers an explanation it is meant to move the narrative forward and is often the misinterpretation of character we would expect in another of the cast he created. *The Eustace Diamonds* was the last of Trollope's novels to have a very large sale, and it still retains its brilliance, seeming as modern as anything written in the past few years about Victorian England. It is easily, and enjoyably, reread, possibly because of a strange device that Trollope used, much to the mystification of some of his critics. He reveals who stole the diamonds soon after it occurs, so that the suspense would seem to be irreparably damaged, but this brings him closer to the point of his story, Lizzie Eustace herself. She lives in a portrait so accurate and full that anyone beyond adolescence can find her soul-sister without excessive reinterpretation.

The novels that followed *The Eustace Diamonds* began to lose their public, and the final novel of the series, *The Duke's Children*, was cut at the demand of the publisher. The complete text exists and should be published for the Trollopians who never have enough of their favorite. Surprisingly, there is no collected edition of Trollope's works, as there is of all the novelists mentioned so far, from Defoe to Thackeray. There are several biographies—one very recently published:

Trollope, His Life and Art, by C. P. Snow—because Trollope's life is at least as fascinating as that of any of his characters. Critics often complain that Trollope wrote too much, that not all of his novels can be considered even good third-rate works, and yet the privilege of an author is to write what he has to, and writing was to Trollope almost a physiological function as essential as the digestive process. In the last of his life, it is generally agreed that he wrote so much and was so uncritical that he damaged his own reputation by such inferior works as *The Struggles of Brown, Jones and Robinson.* Students of Trollope have found such works embarrassing, and the general public is not likely to wish to read them any more than the first of Trollope's novels.

Like Melville, Trollope is periodically rediscovered, and a new wave of interest is likely to follow a motion picture or a television series devoted to his work. *The Pallisers,* made in Great Britain and broadcast in Canada, would have the immediate effect on American libraries if it were shown in the U.S. of creating a sudden demand for Trollope's novels. It is stylishly produced with as much attention to detail as Trollope would have required, even though his novels do not include those lengthy passages in which everything is minutely identified whether any use will be made of the information or not.

A budding novelist can do no better than to study Trollope carefully, his good books, which are better than most of the other novels of the time, and his failures, which were published because of Trollope's habit of making use of everything. Victorians were remarkable keepers of records—Trollope recorded all his sales at the end of his *Autobiography*—and the impulse to make everything serve a purpose made Trollope accept commissions for travel books as if he were on the brink of financial disaster. Few authors have left so complete a record of their work or devoted so much time to a productivity that was rarely equaled. Later novelists—except those that are strictly speaking Victorians living beyond their time, such as Henry James—have found Trollope a source of example of brilliant dialogue, penetrating study of character conveyed through the narrative itself, and economy, despite the length of the whole novel, of description and detail. Like all novelists, Trollope wrote in large measure to satisfy himself, hence the hunting scenes, which are not always brought in as meaningless digressions. In *The Eustace Diamonds,* the hunting scene contains the climax of the work.

At the time that Trollope was gaining his reputation in England, French novelists attained the status of world authorship. A tradition of eroticism had characterized French literary works for the English, who usually referred to François Rabelais and his novel, if it is that, *Gargantua and Pantagruel.* To find the novels of intense popularity, worldwide, the reader may begin with George Sand's works, which have been translated; but the author herself rather than her work (*Indiana,* for instance) tends to be of most interest. A possible exception is the Abbe Prevosts's novel *Manon Lescaut,* which has survived as an opera and is exemplary of the French attention to style and structure.

Victor Hugo was not only a great poet but a great novelist whose works have captured the attention of the reading public in a way that few other French writers achieved. *Les Miserables* is usually not given an equivalent title in English ("The Wretched One" is an approximation and confirms the fact that pure translation of titles is an example of the difference in the languages). Alexandre Dumas wrote lengthy adventure tales, although *The Count of Monte Cristo* is somewhat like the accusatory novels of Gogol and is fascinating because Dumas chooses to depict individuals who survive the most desperate of injustices and cruelty to succeed in their desires at last. *The Three Musketeers* remains a highly popular work.

For a different reason, Gustave Flaubert, whose life from 1822 to 1880 parallels the lives of the major Victorian novelists, gained great attention because of the censorship of his novel, *Madame Bovary*. It is difficult to understand why the Victorians on both sides of the English channel were so dismayed by the book. Certainly Madame Bovary punishes herself far worse than any other judge or jury would have contemplated as she stands eating a poisonous white powder as if it were sugar. Her only misdeed was adultery, but the novel is not concerned so much with her sin as with her guilt. Flaubert was more candid than the age would permit, but like his predecessors, Stendhal and Balzac, he is concerned with the development of character, with the reactions of individuals to events that continue to perplex and dismay historians. Novelists have often succeeded at interpreting social history more effectively than scholars, probably because the novelist is involved with his characters and the setting in which their lives are played out in a way that a historian would not attempt. What seems to be artificial in a formal history is natural in a novel.

Not that novels can be accepted as accurate portraits of everything. Certainly the Victorian interpretation of human sexuality and its manifestations, especially during the period when the Queen gave her name to a peculiar efflorescence of hypocrisy, must be read as indicative of literary constraint rather than as accurate pictures of the times. *My Secret Life*, by an anonymous Victorian, is a more authoritative portrait of sexuality and its effect on the people of the time than can be found anywhere else, just as John Cleland's *Memoirs of a Woman of Pleasure* (commonly called *Fanny Hill*) portrays the actions of prostitutes during the 18th century. French novels came to be synonymous with salacious literature, even though Honoré de Balzac remains one of the most perceptive writers of his time, the early 19th century, and his novels *Eugenie Grandet* and *Pere Goriot* are fascinating and a relieving change from the intense limitations of fiction then current in England. Balzac wrote nearly twice as many novels as Trollope and rewrote far more, so that his use of French is a model of the way the language can be employed to create utmost suggestivity with maximum economy of verbiage. French writers can use words with a literal meaning in a figurative sense in a way that is unnecessary, though possible, in English. *The Red and The Black* and the *Charterhouse of Parma* by Stendhal are the foundations of French realism which Flaubert continued.

At the same time, Nikolai Gogol created a novel that portrays the evils of his time in a way that Dickens would have understood, but Gogol seems to point out particular persons and incidents, hence the designation accusatory novels. *The*

Inspector General, which was made into a movie for Danny Kaye, and *Dead Souls* are indictments of the morals of his time. Often called satirical, these novels employ humor to relieve the dark portrait of cruelty, dishonesty, and malevolence that seem to guide the characters from one disaster to another. However, the later 19th-century novelists, such as Ivan Turgenev and Feodor Dostoievsky, do not fit into the accusatory pattern.

Turgenev's portrait of the upper classes in *Fathers and Sons* and Dostoievsky's sensitive examination of the foibles of the upper middle class had much greater effect on English literature when they were translated than the French novels of the same period. Critics have complained at length, and without much success, about the translators, Louise and Aylmer Maude and Constance Garnett, whose work remains standard, even though their essentially Victorian approach introduces nice-nelliness into the language when the Russian is rather rough and basic. *The Brothers Karamazov* and *The Idiot* compare much more readily with the novels of the 20th than with those of the 19th century. The influence was felt among novelists who could examine human frailties in a sympathetic fashion rather than with a satiric leer of disdain. The heroes and heroines of Victorian fiction are uniformly beautiful and have perfect features.

There were no world books among the novels of Theodor Storm and Fritz Reuter. The 19th century in Germany was not so much the period of great fiction as of great philosophy. Theodor Storm's regionalism in *Immemsee* and *Schimmelreiter* [Rider on a White Horse] were familiar to 19th-century English readers and to students of German. They are really novellas rather than novels, a distinction made on the basis of length more than anything else. Reuter's Plattdeutsch was not easy for the Germans to understand, and his three historical works, although compared with the style of Dickens, have failed to make an impression among a large audience outside Germany.

George Eliot was among the few Victorian novelists who attempted dialect and regionalism. Her novels are weighty and difficult to read at present, and many students of the novel have complained of wading through such tomes as *Middlemarch* and the *Mill on the Floss*. *Silas Marner*, in construction and in length, is a nearly perfect example of a novella, a brief work of fiction centered around a single episode and a small cast of characters. Regionalism is much more effective in the works of Thomas Hardy, in *Far from the Madding Crowd*, *Tess of the D'Urbervilles*, and *Return of the Native*. Although he lived for 88 years, from 1840 to 1928, Hardy as a novelist can be considered a late Victorian because his novels were written between 1878 and 1895. He and George Meredith led the younger novelists to explore themes that had been forbidden before. Hardy's treatment of adultery in *Jude the Obscure* provoked a reaction so severe that he wrote no more novels.

Walter Scott, much earlier, wrote historical novels that became world books simply because the stories were good, the setting romantic, and the narrative style effective enough to maintain the interest of the reader. The Victorian writers often put their stories in a period some 30 or 40 years previously, with the notable exception of Trollope. Walter Scott's *Ivanhoe* is set in the period of Richard the Second and became so popular that the period itself became a favorite of historical novelists. Scott, however, did not bring to his stories a depth of psychological study, so that Stendhal scarcely can be compared with Scott. The tradition of the historical novel, especially a period of history beyond the lifetime of the author or his parents, was well established by the time George Meredith created stylistic prose efforts that began the psychological novel in a setting approximately of his own time.

The Ordeal of Richard Feverel and *The Egoist* are often assigned in college and university curricula, but there has been no periodic revival of interest in Meredith's novels as there has been in Trollope's works. There are Meredithians just as there are Trollopians, the difference being more a matter of taste than of anything else. Both investigate the effect upon their characters of events beyond their control, but they do it in widely different ways. Meredith introduced the inner monologue that was to end, finally, in the stream of consciousness of James Joyce and Virginia Woolf. Trollope portrays psychological facts in the actions of his characters. Meredith did not have nearly the early financial success of Trollope; his first novel (*The Ordeal of Richard Feverel*) was branded as prurient by the lending libraries of the time (1859), thereby impeding its sale and its popularity. That it has remained so long in the minds of critics as a significant work of literature reflects as much its influence on subsequent writers, mostly long after his death in 1909 at the age of 80, as any intrinsic merit. Meredith was a great portrayer of women whom he regarded as the equals of men in every respect, unlike his fellow Victorians. *Diana of the Crossways* and *The Egoist* were financial successes, and finally Meredith won honors never given to Trollope, but at a time when he was so old and ill that it must have been rather a hollow triumph. Meredith considered himself a poet, but his poetry has not survived as well as his prose.

Samuel Butler's life spans the Victorian age almost exactly (1835 to 1902) and his most remembered work, *The Way of All Flesh,* is among the few successful autobiographical novels. It was published after his death and was highly influential in its revolt against the moral imprisonment of the Victorians. George Bernard Shaw regarded the novel as the best written during the period of his life. The only novel to attain success during Butler's life was his *Erewhon,* the first Utopian novel to gain popularity. It inspired many imitators including Edward Bellamy's *Looking Backward, 2000–1887,* which sold over a million copies. *Erewhon* was published in 1872 and the sequel, *Erewhon Revisited,* which entirely lacks the freshness and inspiration of its predecessor, in 1901. Utopian novels are closely related to science fiction and can be considered the impulse that started the genre.

Looking Backward, 2000–1887 is a protest novel in part, just as *Erewhon* is. To conceive of Utopia is to illustrate what is less, usually much less, than Utopian about society. Utopias had fascinated both writers and readers since Thomas More's book, *Utopia,* but that was not a novel as the word is now understood.

More concentrated on the details and justifications for his Utopia rather than on the people who lived there, while Bellamy used his Utopia to proclaim his socialist ideas. Protest novels of the more inflammatory kind were nothing unusual by the time *Looking Backward* was published, especially since the publication of *Uncle Tom's Cabin*, by Harriet Beecher Stowe, in serial form in 1851 and 1852. If a world book is a novel that is translated into many languages and adapted to many different forms of presentation, then *Uncle Tom's Cabin* belongs in this category. Protests over social conditions are omnipresent in Dickens's novels, but *Uncle Tom's Cabin* was written for the purpose of exposing the harsh conditions of slaves in the South. It was popular after the Civil War and has never lost all of its appeal, despite its now annoying style.

Science fiction as a genre, however, really begins with three novels by H. G. Wells: *The Time Machine* (1895), *The Invisible Man* (1897), and *The War of the Worlds* (1898). These three novels fascinated readers and have been both imitated and adapted into many different forms, especially motion pictures. Orson Welles managed to frighten the daylights out of a nation of listeners when he broadcast a radio adaptation of the *War of the Worlds* in 1938. The phonorecording of this hour-long Mercury Theatre presentation has been made available commercially.

During this same time, the novels of Marie Corelli were immensely popular. Her first novel, *The Romance of Two Worlds* (1886), was enough to establish a career for her which was to reach popular success, certainly not critical success, with *Barrabas*, a popularized account of the Crucifixion of Jesus (1893), and *The Sorrows of Satan* (1895), and reach a climax with *The Murder of Delicia* in 1896. She continued to write through the early Edwardian period, but her overwritten, pretentious prose and lack of substance in characterization or plot, for which her moralizing was hardly a substitute, failed to attract later readers. Her style and her heroines are direct descendants of Richardson and his Pamela; and in an age when a novelist gained publicity in order to sell his creations, she chose to disguise the fact that she was born Mary Mackay in London in 1855, was educated to undertake a musical career, and had no special insight into the religious and psychic experiences she chose to write about.

It was a time when the taste of the reading public was no guide to the lasting value of a novel. Ouida (Mary Louise Ramé, or de la Ramée, 1839–1908) wrote novels that the public acclaimed, especially *Under Two Flags* (1867) despite their bold inaccuracies and altogether romantic picture of high society. If the public liked Marie Corelli's pious attitudes and flagrant moralizing, it also admired Ouida's fast-paced narratives, romantic plots, and lack of sermonizing. Various technical improvements in printing, ranging from the rotary press to the invention of the mechanized typesetting devices (Linotype and Monotype), made wide distribution of books at relatively low cost possible. The opening of public libraries through the same period helped to popularize works in a way that the lending libraries could not achieve.

Immediate success, then, is not a guide to the endurance of a work of fiction. The name Thelma became popular because of the novel by Marie Corelli, but she has virtually been forgotten, and except for gifts from patrons who have saved books for the past century, these works would be very difficult to obtain. The invention of wood-pulp papers on which they were printed sentenced them to a short life that the lasting works have never faced because of the constant printing and reprinting. The first editions of Trollope's works, along with other popular novels of the time, were printed in the same way, but the reader is unaware of this because of publishing ventures that either include all the works by an author or a handily reprinted set, as in the case of Trollope.

Possibly such works were a relief for readers who were fearful of the change that was coming into literature under the influence of Émile Zola in France, Stephen Crane and Theodore Dreiser in the United States, and H. G. Wells in Great Britain. A new impulse was reaching the authors of novels after the scientific assertions of Darwinism and the beginnings of psychoanalysis. Censorship affected novelists as never before, and even the authors of serious work investigating sex, such as Havelock Ellis, found their works either prohibited or restricted to the medical profession. This has been called "naturalism" by critics and traced from the works of Thomas Hardy, whose last work, *Jude the Obscure*, was violently criticized for its treatment of sexuality. Theodore Dreiser's novel *Sister Carrie* was suppressed by Doubleday, its publisher, after his wife complained that her efforts as one of the earliest social workers would go for naught if the novel were widely read. A bookseller was arrested in London for selling a translation of Émile Zola's *La Terre* [The Earth], as was Henry Vizetelly, who translated the book.

Zola's career as a novelist parallels the period when England read Ouida and then Corelli. Like Balzac, whose *Comédie Humaine* was projected to include 143 novels (of which 80 were actually written and published), Zola wrote 20 lengthy novels in a series tracing the events in the lives of the Rougon and the Macquart family during the period of the Second Empire. Enjoying great popularity in France, Zola was mystified by the repugnance which greeted translations of his works in England (using the Cockburn interpretation of the Obscene Publications Law of 1857). Zola's Rougon–Macquart series was considered depressingly sordid, although his first highly successful novel, *L'Assommoir* [translated as *Drunkard*], 1877, the seventh work in the series, is a study of alcoholism expressing Zola's belief that heredity accounted for the weakness. Naturalism has come to mean the effort to depict human beings, without the intervention of such literary devices as euphemism, by trying to find all the influences upon the events of an individual's life traceable as much to the inner nature (often of guilt over misbehavior) as to the circumstances is which they find themselves. Zola probably meant naturalism to imply that the novelist was bound by scientific facts as they were discovered, it being generally thought that a scientific discovery settled a matter once and for all. Hence, while heredity, as understood at the time, could account for patterns of mental retardation, it could not account for what are essentially learned traits. Drunkenness is not altogether considered hereditary nor environmental, but it is now thought a disease, whatever its origin, and Zola was in advance of his time in seeing the condition as he did.

Novelists, however, have never been bound by science or even fact in the pursuit of their art. Later avant-garde experiments would expand the concept of a novel, but the essential ingredients are people, or creatures that bear a recognizable resemblance, involved in events that can be imagined. The purpose of story telling throughout the ages has been to enlighten and to entertain. The latter remains essential, since many readers devoted to one kind of fiction or another have long ceased to be enlightened by any detail they read, although they continue to be entertained. Although Zola could not be expected to prove or disprove the influence of heredity in cases of alcoholism, something that still remains beyond the capacities of scientists, he could show the effects of alcoholism on the fortunes of a family. Two of the series, *Nana* and *Zaza*, are in every sense world books especially in the European traditions. Both became the source of dramas and operas, an indication that strong characterization was welded to a narrative at once impelling and credible.

By the end of the 19th century, the novel as a principal source of entertainment and enlightenment began slowly to give way to other forms of mass communication either recently developed or soon to come. Although radio had been invented in a time much earlier than its use as mass communication, as had television, the improvement of roads and railroads assured traveling companies who could bring plays and lecturers to the vast regions of the United States almost as easily as they traveled about Europe. The popularization of Edison's phonograph assured performers a very much enlarged audience, and the rapid development of the motion picture as a source of entertainment brought a kind of unbounded stage to theaters everywhere. The novel and the lending library were in competition with many other forms of amusement, so that as literacy generally increased through the Western world, the willingness to read tended to decrease somewhat. In general, though, it is untrue to say that television is the last damaging replacement for reading. Like novels themselves, television incites curiosity that can be satisfied by reading nonfiction where the facts are reliable and apparent. However, each television series based on a novel has occasioned a renewed interest in the author generally and in the particular work. *The Forsyte Saga* by John Galsworthy showed not only the value of continued stories based on great works of fiction but also the public's interest in the novels themselves. They were reissued in paperback with a renewed sale that was greater than the distribution at the time of their publication.

Research libraries and those college libraries where great attention is paid to the works of the 19th century should collect not only the works of the major writers but those of minor novelists as well, and if the student is to learn something both of the art and success of literary criticism, as well as its failures and misjudgments, the highly popular works of the time should be included. It is most instructive to read Marie Corelli's *Sorrows of Satan,* and an aspiring novelist will see both the success of the story (its narrative) and what to avoid. Historians of literature and critics have tried to find the first novel in a given language or society and have often neglected the novels that either influenced the public or other novelists. All of the genre novels are derived from successful experiments of an earlier time.

Of all the American writers of the 19th century, few have gained so much attention and critical acclaim as Mark Twain, Samuel Langhorne Clemens, whose life from 1835 to 1910 covers the period of transition of an America losing its patriotic founders, settling its major crisis, and becoming a world power not only in an industrial or military or economic sense but in a cultural sense as well. Twain can be called a novelist because of his 10 novels (*The Adventures of Tom Sawyers*, 1876; *The Prince and the Pauper*, 1881; *The Adventures of Huckleberry Finn*, 1884; *A Connecticut Yankee in King Arthur's Court*, 1889; *The American Claimant*, 1892; *Tom Sawyer Abroad*, 1894; *The Tragedy of Pudd'nhead Wilson*, 1894; *Personal Recollections of Joan of Arc*, 1895; *Tom Sawyer, Detective*, 1896; *The Mysterious Stranger*, 1916, corrected and reissued, 1962). He was also the coauthor, with Charles Dudley Warner, of the novel that gave its name to the period in which it was published, *The Gilded Age*, 1873. His travel books are at least as entertaining as his novels (*Innocents Abroad; or, The New Pilgrim's Progress*, 1869; *A Tramp Abroad*, 1880; *and Following the Equator*, 1897). Even his reminiscences (*Roughing It*, 1872, and *Life on the Mississippi*, 1883) have the quality of an excellent novel, written in modern language, with a modern attention to economy of statement, a preconceived structure, and an orderliness of presentation. Twain is considered a humorist, but he is rather a completely literary figure, including owning and losing money as a printer and publisher, like Balzac; traveling widely and writing about it in the manner he employed in his novels, like Trollope; having a kind of earthy awareness of human beings and their failures and successes, like Zola; damning the evils of his age directly or indirectly, like Dickens. At his best, Twain's writing has a driving narrative that makes his novels interesting to read if only for the story. Twain, however, is most often an observer whose veracity causes him to rise above reportage and whose love of the common language of his time raised his works much above the weightiness of historians of his time. His literary criticism is more a critique of improbabilities and inaccuracies than a deep study of style and construction.

Twain's books were either published by his own firm, hawked about the country as subscription books, or published by Harper, so that the decay seen in the works of other authors does not affect his books as much. His mildly scatalogical work (*Conversation, As It Was by the Social Fireside, in the Time of the Tudors*, probably 1880) is refreshing, and funny, even if it could not have been printed in his day. The Comstock Act of 1873 would have made it obscene and unmailable. Other sketches imply his awareness of, and acceptance of, the human condition. Mark Twain's life is so interesting on its own, and not well enough covered in his reminiscences or *Autobiography*, that it requires a good biographer. Samuel Clemens is not more reliable when he writes of Mark Twain than Anthony Trollope was in discussing himself, probably less. It is very likely that understanding the works of a novelist requires a good biography that goes beyond anything the author was willing to write about himself. In Twain's case, the detail is more exciting than anything of the period except his own writings. Like Cervantes earlier, Twain succeeded in creating characters that seem as real as he is. *Tom Sawyer* has been adapted into almost all other forms available from ballet to motion pictures and television, not omitting musical comedy.

A question used to be asked by critics and literati who were addicted to the English novel: Would the Americans ever write a great novel? At least two world books derive from Twain's work. It is a question whether *Tom Sawyer* or *Huckleberry Finn* is more popular, but the latter is surely a great novel, despite its having been attacked repeatedly for one reason or another. It was considered vulgar by one era of censors, and their liberated successors consider it racist. Whether it is suitable for children depends on the child. Boys and girls read *Don Quijote* without going mad, and they can generally be trusted to bring a certain balanced understanding to anything they read, if they have read enough. Along with *Moby Dick, Huckleberry Finn* states something that is quintessentially American. It is impossible to put Henry James into the same class, and in any case, as a novelist he probably belongs to a later period, even though his novels were written at about the same time as Twain's most successful works.

Beginning with *Roderick Hudson*, 1875, following with *The American*, 1877, until the *Portrait of a Lady*, 1881 (considered by many critics to be his masterpiece and another claimant to the title of "The Great American Novel"), and continuing with the *Princess Casamassima* and *The Spoils of Poynton*, James developed a theory of fiction which he later elaborated in the prefaces to his novels. In all, he wrote 20 novels between 1875 and 1904, undergoing profound changes of theory as he wrote. All his works were republished several times during his life, most notably in the "Plum Colored Edition," which contains not only his prefaces to the novels but also the revisions he felt were necessary. Modern literary criticism of the novel owes very much to Henry James, who not only developed his theories, and invented a useful terminology, but also exemplified what he meant in his own works. His last novel, *The Golden Bowl*, 1904, is to many the final realization of what his other fiction aimed toward. Virtually nothing happens, but the characters exist in changing states of awareness and realization about each other, all told in elegant sentences that give them the fascination of a Noh play or an abstract painting.

Henry James, along with being a highly successful novelist, a critic of particular sensitivity, and the author of brilliant short stories and novellas, among which *The Turn of the Screw* remains the favorite, was also an unsuccessful playwright. Only his dramatization of his novel, *The American*, was mildly successful. His play *Guy Domville*, 1895, was rejected at its first performance by an audience that booed the playwright. George Bernard Shaw was an unsuccessful novelist, so that something of the two forms of literature must preclude skill at the one if an author learns it for the other.

Both Henry James and Mark Twain enjoyed a large European following. Indeed, Henry James—who became a British subject a year before his death in 1916, in support of Great Britain's efforts in the First World War—is sometimes not regarded an American author. His subjects, however, were entirely American, despite his having lived most of his adult life in England, where he associated with other important literary figures of the time. James took as his continuing subject the impact of Europe on Americans and of Americans on Europe. His novels have been criticized, if not condemned, for their hothouse atmosphere of high society. In a way, he is a novelist of society and its manners, but he is much more a penetrating student of exquisite psychological influences and their significance in the setting of utmost gentility and sophistication.

The 20th Century

Novels written before the First World War tend to carry their Victorian ancestry with them, although there was great experimentation with naturalism and with an extension of realism to become naturalistic. In this sense, Joseph Conrad can be considered either a 20th-century novelist or a 19th-century novelist. From the standpoint of influence on the style of other novelists, he must be considered in the later period, because his attention to the formalities of presentation greatly influenced the writers who looked to James for theory and Conrad for examples. Conrad's first three novels are *Almayer's Folly* (1895), *An Outcast of the Islands* (1896), and *The Nigger of the Narcissus* (1897). None of these was a commercial success. This came much later with the serialization of his novel *Chance* (1913). His reputation was established by his associates, who included the important literary figures of his day, and by critics who universally regarded his contribution to the art of the novel as significant. The early novels, in particular, have been made into motion pictures with great success.

Conrad's comparison of the external standards of civilization and humanity and the inner deficiencies in these virtues, with attendant disaster as the result of forces beyond the control of human beings, results in novels of elegant composition and style, strong characterization, and great economy of statement. His works were collected and his biography written by several different authors. Among all his novels there is not that world book that can be found among those works of authors who admired him. It is rather his whole production of novels and collections of short stories that represent the contribution to the literature of the novel.

Conrad's collaborator and friend, Ford Maddox Ford has been considered an important novelist of the time, along with E. M. Forster and Virginia Woolf, although he has not attracted the attention of literary historians. His trilogy on the life of Catherine Howard is composed of *The Fifth Queen* (1905), *Privy Seal* (1907), and *Fifth Queen Crowned* (1908). His tetralogy *Parade's End*, published in 1950, is made up of novels published earlier: *Some Do Not* (1924), *No More Parades* (1925), *A Man Could Stand Up* (1926), and *Last Post* (1928). These are widely mentioned in connection with his novel *The Good Soldier*, published in 1915. It is possible that his work will enjoy the kind of revival that occurred with certain Victorian novelists. Under Ford's editorship, *The English Review* published the first work of D. H. Lawrence as well as of Wyndham Lewis and H. M. Tomlinson.

The novelist who wrote the least and attracted the most critical attention is E. M. (Edward Morgan) Forster, whose novels belong to the early part of the century but whose influence is much greater. *Where Angels Fear to Tread*, published in 1905, was followed by *The Longest Journey* (1907), *A Room with a View* (1908), *and Howard's End* (1910). Some time in 1913, he completed the manuscript of a novel dealing with homosexuality entitled *Maurice*. The standards of the time required that homosexuality be treated as an unforgivable sin to be atoned for only by death. It was a theme carefully avoided by earlier novelists (although mentioned by Smollett in *Roderick Random*) and barely touched on by Oscar Wilde in *The Picture of Dorian Gray* published in 1891. Wilde's trial and conviction for homosexual acts tended to bring the subject into discussion, but the gradual liberation from the Victorian prohibition of sexual topics proceeded slowly, and Forster would have been discussed widely as a homosexual rather than as a novelist if he had allowed the novel to be published. It was made public after his death (in 1970) so that his last novel was published in 1971.

From *Howard's End* until he wrote *A Passage to India*, published in 1924, Forster wrote very little. His criticism was collected in *Aspects of the Novel* (1927), and his essays in *Abinger Harvest* (1936) and *Two Cheers for Democracy* (1951). His considerable fame rests upon five novels and of these *A Passage to India* is regarded as one of the great works of the century. It is truly a world book, having been translated into many different languages, at once a work that is literary and yet popular, a distinction that tended to grow as the years progressed from the First World War to the Second and beyond. Certain critics have tended to label *A Passage to India* as a colonial novel, in the manner of Rudyard Kipling, but it is much more penetrating. Forster cannot be said to approve the British hegemony over India, and his analysis of the way Fielding, the administrator, and Miss Moore, the heroine's aunt, react to her story of rape contains pointed examples of his faith in kindness and truthfulness as a means by which ultra-civilized man resumes his knowledge of, and gains strength from, the earth. This was the theme of the earlier novels, but the paganism of the Mediterranean makes the point much less vividly than the modern practice of the ancient religions of India.

Rudyard Kipling is, properly speaking, a Victorian whose novels and short stories and whose verse gained much popularity during their time. Criticism then that his works were jingoistic, the embodiment of British Imperialism, were later seen as accurate. He was a superb craftsman and his works have been adapted into many different forms. The motion pictures made of his novels have been highly successful, and such works as *Captains Courageous*, *The Jungle Books*, and *Wee Willie Winkie* have great appeal to young readers. Such adult novels as *The Light That Failed*, published in 1892, now seem dated and out of the mainstream of fiction. He received one of the earliest Nobel prizes awarded for literature (1907).

The most experimental of novelists, Virginia Woolf, tried the technique established by James Joyce's *Ulysses* in *Mrs. Dalloway*, 1925, and perfected it in *To the Lighthouse*, 1927. She experimented with time in *Orlando*, 1928, and the means of condensing it in a narrative, and returned to the stream of conscious technique in *The Waves*, 1931. She returned to more conventional narrative forms in *The Years*, 1937. After completing the manuscript of *Between the Acts* in 1941, she drowned herself, during a recurrent bout with depression. Virginia Woolf has attracted more attention as a critic than as a novelist, although her experiments have been followed with great interest by historians of the novel. They are not often read now, lacking the sexuality of *Ulysses* while imposing as much of a burden on the reader's attention; they seem avant-garde, relics of an age whose beauties may yet be rediscovered.

This seems an arid period in English novels. Forster wrote too little to deserve comparison with such prolific authors as Trollope and Balzac. H. M. Tomlinson must be considered a minor novelist along with Wyndham Lewis, who was as much, or more, a painter than he was a novelist. The tradition of the Victorian novel, not only in its constraint of theme but to some extent in language as well, was carried on by J. B. Priestley, as it was by Arnold Bennett.

Aldous Huxley and Evelyn Waugh both gained great attention during their lifetime. Huxley's novels of the jazz age, the 1920s in England, and his later experiments after he had found a residence in the United States, range from *Antic Hay*, a novel of character more than of plot; *Eyeless in Gaza*, in which the customary chronological arrangement is reorganized along the lines of emotional development; *Point Counterpoint*, a novel that defies the principle of selecting characters carefully and limiting their number by including more than a hundred; and *Brave New World*, a novel seeking to find what will ultimately become of a world ruled by technology. Evelyn Waugh's early novels, *Put Out More Flags*, *A Handful of Dust*, and *Vile Bodies*, satirize upper-class English manners and beliefs. *The Loved One* is Waugh's view of Southern California, with cemeteries that are epitomized as amusement parks for the dead. This book followed his great commercial success with *Brideshead Revisited*. A trilogy dealing with the Second World War, made up of *Men at Arms*, *Officers and Gentlemen*, and *Unconditional Surrender*, returns to the theme of *Brideshead Revisited*, the conflict between good and evil. A devout Roman Catholic, Waugh only later in his writing became pointed in his statement of Catholic ideals.

The great novelists in English of the time were an Irishman, James Joyce, and D. H. Lawrence, who is as much an expatriate as Henry James. Both these writers are great and have written world books—because they did not settle into the patterns of their time, but in an age of change introduced change either in style or in content.

D. H. Lawrence's novels make a clean break with the asexual atmosphere of the Victorians, or sexuality carefully disguised, and asserts that women have sexual impulses and desires equivalent with, though different from, men. His first novels ran into no difficulty with the authorities (*The White Peacock*, 1911; *The Trespassers*, 1912; and the best of the period, *Sons and Lovers*, 1913). *The Rainbow*, 1915, was officially banned as obscene and was reissued in an expurgated version in 1916. The incident probably had a devastating effect on Lawrence, who wandered about the world from England to the United States to the Mediterranean to Australia back to New Mexico and then to Mexico. Each of these peregrinations had an effect on his writing, producing such novels as *Aaron's Rod*, 1922, dealing with Italy after the First World War; *Kangaroo*, 1923, with an Australian setting; *The Plumed Serpent*, 1926, with a Mexican setting. Lawrence's fame probably rests on *Lady Chatterley's Lover*, which was privately printed in 1928 and expurgated for issue in 1932 by the Dial Press. This was censored as well, and the issue of the complete text in 1959 led to sensational trials in England (*Regina* v. *Penguin Books Limited*) and in the United States, ultimately resolved in the United States Supreme Court. *Lady Chatterley's Lover* demonstrates both Lawrence's achievements as a novelist and his debt to the 19th century. He frankly confessed having used George Eliot as a model, hence his language lacks much of the colloquialism and informality developed by Trollope with great effect. There is a kind of tortured elegance in his vocabulary and sentence structure that repels modern readers accustomed to the transparent clarity of Gore Vidal, phrased in sentences as elegantly constructed amid paragraphs that exhibit all of Lawrence's driving force of narration without his didacticism and woodenness. Some of the characters never seem to breathe life, certainly Lord Chatterley doesn't, with his fussiness over French participles, and Mellors exists largely as a sex machine more or less engaged in gamekeeping for Lord Chatterley. Significantly, in some of the attempted revisions and in the expurgated version, Mellors is deprived of his uncultured speech and given strong middle-class aspirations.

Granting all these reservations, Lawrence was seeking to explore as a novelist a kind of naturalism that the English authorities and publishers rejected. The nature of sexual relationships among men and women have become a vital part of a novelist's ability to draw character; and an exploration of the way in which society imposes sex roles at variance with either masculine or feminine psychology in the hands of a D. H. Lawrence, unrestrained by considerations of whether he was frank beyond the current limits of candor, would have enlarged both literature and understanding. A complex, many-faceted writer whose vital energies are not sapped by futile battles with society's more imposing windmills can liberate understanding in a way that neither a psychologist, however well he writes, if any do, nor a sociologist could attempt. The novel is the laboratory of society where its possibilities are explored without the hazard of aftereffects that result from human ignorance. Novels can advance knowledge as well as, or better than, many kinds of dissertations and treatises.

James Joyce was constrained by official censorship, though not to the extent that Lawrence was. After his short stories, *Dubliners*, was published in 1914, he wrote his first novel, *Portrait of the Artist as a Young Man*, published in 1916. In this somewhat autobiographical novel, the technique of the stream of consciousness can be seen clearly, though not worked out in the detail of *Ulysses*. The work was published in Paris in 1922 and promptly banned in England and the United States. Ten years later in a famous case, Judge Woollsey removed the ban, permitting Random House to publish the work. Woollsey found the novel soporific but not aphrodisiac. Joyce lived in Paris, during the period when American and British expatriates resided there, and worked continuously on his novel

Finnegan's Wake. His first novel achieved a remarkable condensation of time and emotion by exploding some of Henry James's favorite theories, leading, one might say, to the disorganization of the traditional plot structure. *Ulysses* goes much further by expanding time so that a day constitutes the chronology of the novel, although each character's lifetime is involved and creates his view of the events of the day (Paddy Dignan's funeral, in particular). The sentence was disorganized and rephrased as it might exist in the partially literate atmosphere of the conscious mind. *Finnegan's Wake* is the ultimate linguistic experience. Having successfully tossed out plot, narrative, paragraph, and sentence, Joyce throws out a normal vocabulary as well, leaving the reader to puzzle out word by word, as a child might do, all the meaning of what appear to be pronounceable words in English but have no known semantic value until the words are torn apart "Agenbite the inwit," for example). There is good reason for believing that *Finnegan's Wake* is truly epic verse. No attempt was ever made to censor *Finnegan's Wake*, although it is as flagrantly sexual as anything ever written, probably because no judge or jury could ever devote the time needed to read the novel thoroughly. Of two periodicals devoted entirely to Joyce, one *A Wake Newslitter* (published by the English Department of Dundee University, Scotland), is a continuing explication of the book. It was written over a period of some 19 years and stunned critics when it was published in 1939. For once, the review of the book could not possibly have been accomplished by anyone less sensitive to language than Joyce, and sensitive to Joyce's knowledge of language. He learned the Danish that Ibsen used, a kind of Norwegian used in the southern part of the country, in order to read Ibsen's plays in the original. Joyce expected that someone would have observed that he treated of universal themes both symbolically and independent of language. The book is untranslatable and could indeed furnish a reading experience that would last a lifetime. It will long be discussed, often attempted, but rarely read, and probably never explained.

Later novelists, such as Aldous Huxley and Evelyn Waugh, may become as dated and stale as some of the Victorians, but the chances are that Joyce's work will remain fresh, possibily as fresh as *Don Quijote*. Much tangential literature already exists dealing with every phase of Joyce's life and art, although his entire work consists of three books of poems, a play (*Exiles*, 1918), 15 short stories published in *Dubliners*, and three novels. Without question, Joyce is the leading writer in English in the 20th century so far as literary interest is concerned. A motion picture of *Ulysses* was very successful and established Joyce's amazing powers of description and effectiveness of narration when the former was reduced to a picture that no longer clouded the realization of the latter. Molly Bloom, her husband Leopold, and Stephen Daedalus are somewhat more real than Joyce himself. Even "stately, plump Buck Mulligan" seems to exist somewhere outside the book. (It is generally believed that Joyce was using Oliver St. John Gogarty as a model for this rather unsympathetic character.)

Aside from the conquest of obscenity as a barrier to literature, the 20th century produced several other great novels or brought them to light, although written earlier. Leo Tolstoy was discovered and worshipped before his death in

1910. Born in 1828, he published *War and Peace* in 1866 and *Anna Karenina* in 1877. His last novel, *Resurrection*, appeared in 1900. Among these, *War and Peace* is generally regarded as one of the world's great pieces of literature, ranking with *Don Quijote* as a novel that represents the supreme achievement of a writer. To the factual details of Napoleon's invasion of Russia, from 1810 to 1814, Tolstoy adds the penetrating analysis of psychology that distinguishes a novel from history. Andrei and Pierre are two different kinds of men, and Natasha, whom each loves, is a remarkably lifelike portrait of a young woman. When translated by Louise and Alymer Maude, the novel gained an immediate English following, never enjoyed by *Anna Karenina* and even less so by *Resurrection*. Tolstoy's novels include great use of detail to create the suspension of a concept of reality that leads the reader into the author's world. Neither Dostoievski nor Turgenev used detail in that manner, nor Gorki, the first of the revolutionary writers.

Considering the expanse of the period and its events, *War and Peace* is not a long novel, although by no means short. Its peer is Marcel Proust's *A la recherche du temps perdu*, brilliantly translated by C. K. Scott Moncrieff. It is made up of seven long novels. *Du côté de chez Swann, A l'ombre de jeunes filles en fleurs, Le côté de Guermantes, Sodome et Gomorrhe, La prisonniére, Albertine Disparue,* and *Le temps retrouvé.* The first of the novels was published at Proust's expense by Bernard Grasset in 1913. It met with some success and after long negotiations, with the urging of Gide, *La nouvelle revue française* published the remaining novels between 1919 and 1927, the latter three unrevised. Twentieth-century literature was deeply influenced by Proust's concept of the persistence of memory. The English translation, under the title *The Remembrance of Things Past*, appeared first in 12 volumes. Moncrieff died before completing his translation of the last volume, which was undertaken first by Stephen Hudson in 1931 and redone by Andreas Mayor in 1970. The titles of the novels are translated as *Swann's Way, Within a Budding Grove, Guermante's Way, The Cities of the Plain, The Captive, The Sweet Cheat Gone,* and *Time Regained.* Like Samuel Putnam's translation of *Don Quijote*, Moncrieff recreates the method and substance as well as the intent of the author in each of his long sentences. Moncrieff's use of literary allusion in the titles reflects his understanding of Proust, who was a critic of note in his time, highly educated and very well read. His earlier novel, *Jean Santeuil*, and a large group of letters and occasional pieces for the various periodicals, along with a translation of Ruskin's *Sesame and Lilies*, constitute his work. He wrote much more than the 3,000 letters already published, collections of which are being published both in French and in translation.

The novel is circular, arriving at its beginning by progressing to its end, and it truly brings the reader into the author's world so that, in a sense, he never leaves. The hypnotic prose is a web of invisible filaments holding the reader captive as the plot unwinds simply and elegantly through myriad details to its final realization. Its influence can be readily understood by anyone who has had the patience to become involved in it. In a sense, Proust achieves what Joyce did, but by a totally different method, and both these authors owe much to the rediscovery of the human being by Freud and his successors.

Naturally Proust's work and his life have invited a great amount of interest, resulting in biographies, books of criticism, analyses, and even a periodical issued annually by the Societé des Amis de Marcel Proust, *Bulletin,* since 1950. His first novel was first published in translation in 1952, and speculation both on Proust's method and his life and their correlation will always leave something more to be said.

The period of French literature included novels by Anatole France, Jean Maurois, André Mauriac, and many others, some of whom have won great attention and critical acclaim. André Gide wrote only one novel, *Les faux-monnayeurs* [translated as *The Counterfeiters*], although he exerted enormous influence on both English and French authors of his time. His shorter works of fiction have become rather standard fare in French classes. The 20th century was a period of extreme trial in France, as in most of Europe, and the French novel became increasingly experimental while at the same time becoming increasingly specialized in setting, character, or style.

Germany produced two great writers after the First World War, Thomas Mann and Erich Maria Remarque, both of whom went into exile rather than submit to Hitler's domination of content that Nazism demanded. Remarque was deplored by the Nazis as pacifist because of his famous novel, *All Quiet on the Western Front*, followed by a succession of novels about Germany after the First World War but without the impact of his famous story of soldier civilians at the mercy of German militarism. Thomas Mann was a much more profound author, who, along with Herman Hesse, best represents a literary movement devoted to the form and structure of the novel, usually called Impressionism. Mann's novel *The Magic Mountain* and his novella *Death in Venice*, along with his early work *Buddenbrooks*, earned him the Nobel Prize in 1929. He became an American citizen in 1940 and survived to the age of 80 in 1955. Herman Hesse, Mann's contemporary and the other leading figure of Impressionism, won the Nobel Prize in 1946. He became a Swiss citizen in 1923, having been a conscientious objector in the First World War. His novels have recently gained great attention in translation, particularly *Steppenwolf* and *Demian.*

A far more influential author whose work would more properly be called Expressionism is the Czech, Franz Kafka, who wrote in German. The author of novels that use fantasy as a means of expressing both emotional and philosophical ideas, his work was given publicity by the existential movement, especially his novel *The Trial*. The hero never learns what he has been charged with, not even at the moment of his execution when he is very courteously stabbed to death. An earlier writer, Jaroslav Hasek, produced *The Good Soldier Schweik* recording the Czech reaction to the Austro-Hungarian militarism of the First World War. It is generally regarded as a comic masterpiece.

The literary movement that had the greatest force in America is derived indirectly from both American and French naturalism. Stephen Crane's masterpiece, *The Red Badge of Courage,* relates the incidents in the life of a young Civil War soldier not as aspects of heroism but as the reader would tend to verify when dealing honestly with his own ideas of courage and cowardice. Dreiser was more experimental, and less exacting as a writer, so that the sordid details in the life of Carrie Madenda include reversions to the high-flown rhetoric of Victorian heroines. *Sister Carrie*, when finally published, was seen to be not a work of eroticism at all. *An American Tragedy* examines the American system of justice less than it attempts the analysis of a crime and its results, never quite resolving whether the hero is guilty or not. Naturalism, in the sense it has come to acquire among American novelists, attempts to recreate not only the facts known of human beings but also a veracity of event and setting so that the characters speak as would be expected of individuals in their station in life.

The naturalists were always in difficulties with the censors and tended, finally, to become immersed in experiments very like German Expressionism. Novelists who chose a single setting or a consistent plot might write beautifully, but they did not advance the novel so much as they benefited from other experiences. Among the writers in the early part of the 20th century, Edith Wharton seems the most likely to outlast both her contemporary fans and her critics. *The Age of Innocence, Ethan Frome, The House of Mirth,* and *The Custom of the Country* established her reputation both as a novelist and as a social critic. Immensely wealthy, she was able to live in France and to appreciate the literary principles that provided a novel with a structure, exacted economy of statement with maximum suggestivity, and gave the reader an insight into the motivation of her characters without pauses for explanation or moralizing. Her debt to Trollope in this regard is more in the form of adaptation than of imitation. Recently, a wildly erotic passage from an unwritten, but projected, novel on incest provided clear evidence that Edith Wharton, among others, was constrained by the American concept of obscenity applied to works of art.

Ernest Hemingway, Sinclair Lewis, John Steinbeck, Pearl Buck, and William Faulkner have won Nobel Prizes for their contributions to the art of the novel. The first to do so, Sinclair Lewis, brought Dreiser's naturalism to an analysis of the American character that was often unflattering and sometimes painful. *Main Street* and *Babbitt* have become classics, in their way, and continue to attract readers as the fads and movements of the novel change. Like Lewis, Steinbeck was often a social critic, especially in his novel of the Oklahoma migrant farmers of the depression years, *The Grapes of Wrath*, the first American novel of protest since the antebellum period to gain worldwide recognition. His novella, *Of Mice and Men*, has been successively a play, a motion picture, and an opera. Pearl Buck gained fame through novels based on the life of Chinese farmers, somewhat above the level of peasants, emphasizing the common humanity of all of us. Her *House of Earth* trilogy, including *The Good Earth, Sons,* and *A House Divided*, gained her worldwide recognition, aside from winning both the Pulitzer Prize and accounting in part for the Nobel Prize.

The two authors who have been most influential are Ernest Hemingway and William Faulkner, both for reasons of style and content. Hemingway made the sharpest break from the overwritten, excessively literary style of other authors. His first novel, published under the title *Fiesta* in Great Britain and *The Sun Also*

Rises in the United States, puts characters at the mercy of unreasoning circumstances without anything brilliant or important to say. *A Farewell to Arms* is one of the best novels dealing with the First World War, which like the sea in *The Old Man and the Sea* was not the result of bad planning by ignorant leaders but some natural force that destroyed the lives of his characters. *For Whom the Bell Tolls* portrays the Spanish civil war not as the desperate, if ill-considered, struggle of a highly liberal government to fight off the onslaught of fascists, but as a kind of elemental struggle against an irresistible fate. The difference between Hemingway and Jack London, what makes one a novelist of great influence and the other an excellent craftsman whose stories appeal to men, is Hemingway's essentially pessimistic view of life. Hemingway had his failures, aside from the silly pretentiousness of *For Whom the Bell Tolls*, in novels like *Across the River and into the Trees*. Nevertheless, much of what he wrote endures, especially his last novel, *The Old Man and the Sea*—which is really a novella, a form for which he had especial talent.

Jack London's books appeal to young readers because they are virtually without sexual incident without being asexual. His men tend to be supermen and their struggles say very little about the human condition. His socialist novels, such as *The Iron Heel*, portray his limitations even more precisely. Hemingway's ardent admirer, John O'Hara, had much greater success depicting women than his mentor. However, except for *Butterfield 8* and *Appointment in Samara,* O'Hara seems rather dated, even in his recent *Ten North Frederick*. Certainly O'Hara does not enjoy the reputation that Thomas Wolfe built before his untimely death at a young age.

Wolfe's style may be compared profitably with that of Faulkner, although the subject matter of the two writers was vastly different. Wolfe came from Asheville, North Carolina, and like Proust his novels are largely autobiographical. There are four novels, representing two cycles. *Look Homeward Angel* and its sequel *Of Time and the River* pursue a character named Eugene Gant from boyhood to young manhood, and were published during Wolfe's lifetime. *The Web and the Rock,* followed by *You Can't Go Home Again*, were extracted from the manuscripts remaining after his death. The main character is named Webber, but he is only the author in a new transformation. Wolfe wrote compulsively, sometimes stretching to write on the ceiling of his room in Brooklyn, and his lack of sufficient critical ability was more than compensated for by an editor, Maxwell Perkins, who supplied him with advice and encouragement.

William Faulkner, however, brings a lush style to the study of the South in a series of novels dealing with decadence and revival that state something of human endurance and courage. *The Sound and the Fury* and *Sartoris* were published the same year, but sentences that run for more than a page were too much a novelty for the average reader. *Sanctuary*, meant as a money-earner, is actually more experiemental than the other novels both in content and in style. The corncob used in the rape scene became almost as familiar as Madame Bovary's white powder. *As I Lay Dying* is considered by some critics as a masterpiece both of character and of structure. His later novels seem more constrained and less an experiment with words and individuals than an attempt to find some kind of hope for characters who seems to be plotting their own destruction.

Faulkner was not a southern novelist, despite his devotion to the South, in the sense that George W. Cable and Carson McCullers were, wildly different as they are. McCullers gained instant recognition with her novel *The Heart is a Lonely Hunter,* which has lost little of its freshness and vigor. *Reflections in a Golden Eye* and *A Member of the Wedding* complete a trio of novels that are as poignant a picture of southern life as any ever written. Like Mary Webb, Carson McCullers has an enduring place among novelists. Webb is an English writer of a few years earlier, whose five novels set in Shropshire remain indestructible while the works of more widely acclaimed minor novelists go unremembered (*Gone to Earth, The House in Dormer Forest, The Golden Arrow, Seven for a Secret,* and her masterpiece, *The Precious Bane,* all published between 1916 and 1924). Ellen Glasgow's *Vein of Iron,* for example, seems as enduring, although her novels about the industralization of the South, *Virginia, In This Our Life,* and her other work seem to be temporarily in eclipse.

Later novelists, such as Truman Capote, Gore Vidal, John Updike, and Vladimir Nabokov have experimented extensively with style to the extent that a comparison is more easily made with the French novelists than with their British counterparts, who seem to be more devoted to developing a particular stylistic device and sticking with it. There is an expansiveness, as if each were inviting imitators, seeking to find some absolute as clear and suggestive as Balzac, Stendhal, or Flaubert in works that for the most part deal in realism, even though this realism is, at times, transformed into fantasy. Of all these, Vidal has been the most experimental, with subjects ranging from homosexuality (*The City and the Pillar*) to figures in history (*Burr*). The influence of Henry Miller and the liberation of writers leads to such explicit eroticism in such experiments as Hugh Selby's *Last Exit to Brooklyn* and Philip Roth's *Portnoy's Complaint.* Vidal's *Myra Breckinridge* and *Myron* use fantasy to state his contempt for the artificiality of American life.

The novelist who may most easily be compared with the 19th-century antecedents is James Michener, whose lengthy works dealing with the Pacific, *Hawaii,* and with the United States, *Centennial,* and whose shorter works such as the poignant collection of short stroies entitled *Tales of the South Pacific* have a ready-made audience as well as a number of critical admirers. Other novelists, such as James Gould Cozzens, have passed in and out of style with great ease.

Of recent developments the most important has been the rediscovery of the novel as a statement of a personal view of the world, seen most clearly in Joseph Heller's *Catch-22,* which has had enormous influence not only on other writers but also on the current speech of the public. The title has come to mean any hidden but inevitable obstacle, usually arranged by someone for no apparent reason. *Catch-22* enjoys the characteristic of the best novels in being eminently worth rereading. Of all the large number of novels dealing with the Second World

War, it is the most vivid and the most readable; its grim story is told both with hidden laughter and with pathos.

As can be seen, while the novel in England sank into a kind of iterative placidity with all the problems of style and structure worked out, the novel in the United States has been strong, full of experiment and substance. Single novels, such as Margaret Mitchell's *Gone With the Wind*, have obtained a large audience that seems to be renewed each generation. Some of the novelists of the past, for instance Booth Tarkington, wrote stories that were made into motion pictures: *The Magnificent Ambersons*, *Alice Adams*, and *Monsieur Beaucaire*, but these now seem forgotten. Edna Ferber, Frank Norris, Fannie Hurst, and many more produced novels that were seriously discussed by critics and then fell into limbo. It is virtually impossible to predict what novel will suddenly take the imagination of readers and need to be reissued. Hervey Allen's lengthy masterpiece, *Anthony Adverse*, set other novelists to writing giant works that can be called historical romances, including the highly popular *Forever Amber*, by Kathleen Winsor, and later novels by other authors that imitated its rather frank treatment of sexuality. It was later seen that Winsor owed much to John Cleland's *Fanny Hill*.

The censorship battles that allowed the novelist to use the full range of English vocabulary—slang, vulgarity, taboo words, or whatever—and that allowed him to use any means he chose to tell his story, including graphic descriptions of sexual episodes, also provided the freedom for further experimentation with events and the feelings of characters beyond the range of psychologists and sociologists. Notable among these authors is Henry Miller, whose *Tropic of Capricorn* incurred the greatest amount of censure and was finally released from its ban by the action of the United States Supreme Court. Another important factor in the proliferation of novels has been publication in paperback and the development of book clubs. Both these brought ease of purchase, so that a novel that might have a readership of several thousand in the early part of the century would have tens of hundreds, of thousands, or even millions of readers. So far as the written word is concerned, there seems to be little reason or intent to invoke censorship except in works meant for young readers. How young has become a problematic issue.

With its enormous readership, the English-speaking world has been able to investigate novels written originally in other languages, such as Greek with Nikos Kazantzakis, who died in 1957 and introduced *Zorba the Greek* to English readers. Many of those who saw the motion picture or the musical comedy do not know that the author won the Nobel Prize for literature and also wrote the controversial *Last Temptation*. The Japanese language—with a tradition going back to Murasaki Shikibu's *Tales of the Genji*, written sometime during the years of her life, 978 to about 1015 A.D.—has produced a Nobel Prize-winning novelist in Kawabata Yasunari, a popular novelist in Tanizaki Junichiro, and an enigma in Mishima Yukio, whose ritual suicide in 1970 became a worldwide news event. Mishima, in particular, has attracted considerable critical attention with his many novels, almost all of which have been published in translation: *The Temple of the Golden Pavilion*, *Forbidden Colors*, etc.

Novels by Latin American authors, especially Jorge Borges, bring a strange social scene and life-style to the attention of English-speaking readers who would otherwise have no way of understanding the Latin American society and its most original thinkers. The tradition of the Spanish novel is very long, and the success of Vincente Blasco Ibañez early in the century assured later writers of an audience much larger than that of the Spanish-speaking world, whose numbers may be as large but with far less literacy and a weak, but growing, library movement. Considering the promise of tens of millions of readers, including the many in Brazil, Portugal, and Italy for whom Spanish is no less troublesome than a dialect of their own language, the novel in Spanish may achieve a wonderful revival as nationwide literacy accompanies economic development. The two are now recognized as so interdependent that the success of one is proof of the success of the other.

Novels represent a form that is remarkably free, so that amateurs, such as John Lindsay, formerly mayor of New York City, and William Buckley, who is an author but not of novels, can use it to promote ideas. Amateurs, however, cannot advance the art of the novel. This requires the professional who is willing, often, to make great sacrifices in order to pursue ideas that so far have not been accepted. However, since the publication of *Finnegan's Wake*, it is hard to see where the experiments will proceed. Still, Truman Capote has shown in his reportage that the vigor and clarity of writing in a novel, with its firm establishment of character and setting, can provide a narrative that is at once factual, in all but insignificant detail, and also highly readable. The writing of a novel is an exercise that anyone who must convey his thoughts in written form should practice. Some of the most subtle and yet lucid use of English can be found in novels: from *Tristram Shandy,* by Laurence Sterne, to *The Choirboys*, by Joseph Wambaugh. More than 200 years separate these novels, they have little in common aside from being eccentric and whimsical, bawdy and readable, and yet there is a consistency that the English language does not convey as well in any other form of literary endeavor.

An argument exists over whether novels represent a form of popular culture. Certainly novels have found a large market, but there is a difference between *Tarzan* by Edgar Rice Burroughs and "The Heart of Darkness," by Joseph Conrad, aside from length. The latter is a short story that is almost obligatory in college English courses and the former is written in appallingly artificial English, the product of the early part of the century, with its conscious imitation of George Eliot and William Thackeray only slightly realized. Yet Tarzan has become nearly as familiar, and more so with some readers, as Don Quijote. The novel, it seems, can initiate a popular culture movement that produces formula fiction in great quantities for compulsive readers or introduces characters who assume the status of a living person. Serious novels often attract the reader whose diet has been limited. From *Riders of the Purple Sage* by Zane Grey to *My Antonia* by Willa Cather, or *Death Comes for the Archbishop*, is not so long a jump as it may seem. A reader of popular mystery fiction might be dismayed by Dickens's *Mystery of Edwin Drood* and read no more Dickens, but it is rather easy to go from John P. Marquand's *Mr. Moto* to his *Late George Apley*. The technique learned in the mystery novel was applied with great success to the serious works analyzing Boston society.

Libraries must include a large collection of fiction if they serve the general public, and possibly for reasons of policy even libraries serving a special clientele. Certainly the fiction collection of a college library should be elaborate, retrospective, and wide-ranging, supported by the large number of reference tools from bibliographies of the best fiction and bibliographies of bibliographies that include all the work done recently, to provide complete listing of the works by and about novelists. The whole corpus of an author's work along with biographies and critical analysis are essential. Public libraries should only reluctantly exclude novels that have any popular following. Regarding Harold Robbins as the author of "trash" might satisfy the critical acumen of the librarian, but it is clearly a form of censorship and unethical if the book selection policy is made to reflect the preferences of the librarians. Critics, whether librarians or not, have been remarkably unsuccessful in their attempts to predict what will have an appeal that is renewed with each generation.

Research libraries have performed a spectacular service in collecting the original papers, manuscripts, letters, and memorabilia of novelists. Even minor novelists deserve to have their works preserved somewhere in the original form, from which much may be learned by the scholar. Many novelists have lived a better and more varied life than any of their characters, and too little is yet known about the possibilities of the novel as a form of literature. Some of the most profound questions of communication and information transfer may lie buried in the manuscripts of novelists. An author of nonfiction may have found his style in his attempts to write a novel, and even if questions we do not yet know how to ask can be found among the papers, the answers to some we have learned to phrase are probably to be answered in comparisons of style and characterization, narrative, and structure for which the original manuscript is exceptionally helpful.

From this review of the novel, it can be seen that the distinction between fiction and nonfiction is not so clear as might be imagined and often is a matter of doubt, so that a disapproving cataloger who labels a biography fiction, when it is meant by the author despite unforgivable inaccuracies as nonfiction, can engage in an unethical display of his preferences by misclassifying the work. This was done with *Worlds in Collision* by Immanuel Velikovsky, either by design or accident. Whatever the reason, the cataloger is wrong and ought to be told so by any user sufficiently aware of the mechanics of a library to observe the implied judgment.

It is this judgment among librarians that has often been mistaken in the past, so that the history of censorship includes the librarians who refused to allow readers to peruse *Tristram Shandy* or *Tom Jones* until their scholarly intent was known. Librarians later tried to decide what made a novel immoral, when it must be obvious that novels are incapable of immoral acts and have probably little ability to encourage them among their readers. The concept of obscenity has damaged the development of the novel and pushed aside many of the great questions that comprise our ignorance of the human condition. A renewal of censorship, as implied by the United States Supreme Court decision in *Miller* v. *California*, June 1973, must be fought vigorously because Chief Justice Warren Berger was manifestly wrong in saying that the 19th century's adherence to strict policies of avoidance of sexual topics had never harmed anyone. That we are not aware of the harm does not mean we have escaped it. An analogy would be in saying that Hansen's bacillus never harmed anyone because it is not known that it causes leprosy. The great novels assert the common humanity in each of us, and the fight against censorship has been waged to permit Joyce and Miller to experiment with style and content and D. H. Lawrence to construct a plot that demonstrates his belief that women have the same desires as men. Censorship has always had the search for truth as its first victim.

For a discussion of the novel as popular culture, the reader is referred to "Peripheral Fiction," in a later volume of this encyclopedia.

BIBLIOGRAPHY

The following are the most useful reference sources for novels.

Baker, Ernest A., and James Packman, *A Guide to the Best Fiction, English and American, Including Translations from Foreign Languages*, Macmillan, New York, 1932. Standard work for 19th-century fiction. Includes annotations. Not to be trusted for 20th-century works.

Bell, Inglis F., and D. Baird, *The English Novel, 1578–1956: a Checklist of Twentieth Century Criticisms*, Swallow, Denver, Colorado, 1958. An index to critical studies.

Fiction Catalog, Wilson, New York. First published in 1908. Ninth edition in preparation (1976). Listing of "most useful fiction" by author, with annotations.

Freeman, William, *Dictionary of Fictional Characters*, The Waiter, Boston, 1963. Useful listing of characters from major short stories, novels, and plays.

Hart, James D., *The Oxford Companion to American Literature*, 4th ed., Oxford Univ. Press, New York, 1965.

Harvey, Paul, *The Oxford Companion to English Literature*, 4th ed., Oxford Univ. Press, New York, 1969.

Keller, H. R., *Readers Digest of Books*, Macmillan, New York, 1929. Includes fiction and nonfiction. Summaries of 2,300 books.

Kunitz, Stanley J., and Howard Haycraft, *American Authors, 1600–1900*, Wilson, New York, 1938. Includes bibliographies of works by and about American novelists.

Kunitz, Stanley J., and Howard Haycraft, *British Authors Before 1800*, Wilson, New York, 1952.

Kunitz, Stanley J., and Howard Haycraft, *British Authors of the Nineteenth Century*, Wilson, New York, 1936. Includes bibliographies of works by and about novelists.

Literary History of the United States (Robert Spiller et al., eds.), 3rd ed., rev., Macmillan, New York, 1963. Vol. 1, History; Vol. 2, Bibliography. Best source of bibliographies for American authors.

Magill, F. N., *Masterpieces of World Literature in Digest Form*, Harper, New York. Series 1, 1952, includes novels along with plays and short stories.

Walford, A. J., *Guide to Reference Material*, Library Association, London, 1970, Vol. 3, pp. 416–417, 450–458. Excellent coverage of English, French, and German authors, showing bibliographies and other reference tools.

AUTHORS AND TRANSLATORS MENTIONED IN THE TEXT

Prevost, Abbe
Priestley, J. B.
Proust, Marcel
Putnam, Samuel
Rabelais, François
Remarque, Erich Maria
Reuter, Fritz
Richardson, Samuel
Robbins, Harold
Roth, Philip
Ruskin, John
Sand, George
Scott, Walter
Selby, Hugh
Shaw, George Bernard
Shikibu, Murasaki
Smollet, Tobias
Snow, C. P.
Steinbeck, John
Stendhal
Sterne, Laurence
Storm, Theodor
Stowe, Harriet Beecher
Tarkington, Booth
Thackeray, William Makepeace
Tolstoy, Leo
Tomlinson, H. M.
Trollope, Anthony
Turgenev, Ivan
Twain, Mark
Updike, John
Velikovsky, Immanuel
Vidal, Gore
Vizetelly, Henry
Wambaugh, Joseph
Warner, Charles Dudley
Waugh, Evelyn
Webb, Mary
Wells, H. G.
Wharton, Edith
Whitman, Walt
Wilde, Oscar
Winsor, Kathleen
Wolfe, Thomas
Woolf, Virginia
Yasunari, Kawabata
Zola, Émile

JAY E. DAILY

NOVIKOV, NIKOLAJ IVANOVIČ

Nikolaj Ivanovič Novikov (1744–1818), one of 18th-century Russia's leading men of letters, was born in the village of Tixvino-Avdot'ino, near Moscow. His father, a nobleman retired from government service, educated his son at home with the help of the village priest, preferring this to the custom then current among the nobility of hiring French tutors. When the first Russian university opened in Moscow in 1755, Novikov was enrolled in the preparatory school.

After 5 years at school and some military service to please his father, Novikov was assigned as a secretary to the Commission for the Formation of a New Code (Komissija po stanovleniju novogo uloženija), which met from 1767 to 1768. Here he became interested in the peasant question and Russia's social problems in general. In 1768, when the Empress Catherine ended the commission, Novikov knew his own future course of action. For the next 24 years he was to pursue two aims. The first was to fight for social reforms to improve the quality and conditions of life for Russia's masses. His weapons were satirical journals and publishing enterprises.

In 1769 Novikov began publication of his first satirical journal, *The Drone*

(*Truten'*), through which he voiced his views on the political and social issues raised by the commission. The objects of satire were Catherine and her court, and Russia's landowners and serfholders. In 1770 the Empress closed down *The Drone*, thus setting the pattern for the next several years: Novikov would start a new satirical journal and Catherine would close it down. In 1779 he took over the press of Moscow University, where he published a number of journals, the newspaper *Moscow Record* (*Moskovskie vedomosti*), and many books in all areas. He intended to reach as many people as possible all over Russia, with special attention to youth and rural areas; to this end he organized bookselling operations in 16 cities and opened library-reading rooms. He had become a Mason, and used some of the order's funds to expand his publishing operations.

Novikov's second aim was to document Russian contributions to culture, and it is in this area that he made his major contribution to bibliography. In 1772 he published *An Attempt at an Historical Dictionary of Russian Writers* (*Opyt istoričeskogo slovarja a rossijskix pisateljax*). The first Russian biobibliographical dictionary, it contains 317 names of Russian men of letters and science, mostly of the 18th century. This work is quite subjective; Novikov included negative remarks about writers popular at court, and they in turn complained to the Empress about him. He also included some young writers who were not close to the court, some of whom had not even published, who in his opinion were trying to write independently and needed support.

In 1777 Novikov began publication of the *St. Petersburg Scholarly Record* (*Sanktpeterburgskie učenye vedomosti*). Although only 22 issues were published, it is significant as the first critical bibliographical journal in Russia and, indeed, the first bibliographical journal in Russian.

Novikov also published *Ancient Russian Library* (*Drevnjaja rossijskaja vivliofika*, Moscow, 1773–74; 2nd ed., 1788–1791), a series of historical documents and works (patronized and subsidized by the Empress) portraying Peter the Great as a Russian educator and reformer. From his earliest childhood Novikov had been taught to love and respect things Russian, while others around him were emulating Europe. His dictionary and publications on Russian history follow naturally from his patriotic commitment to Russia.

It was inevitable that Catherine would grow impatient with Novikov's constant attacks on her and her court; in 1792 he was arrested and sentenced to a long prison term. Even after his release in 1796 following Catherine's death, he was not allowed to return to his work. He spent the remaining years of his life at his country home.

BIBLIOGRAPHY

Berkov, P. N., ed., *Satiričeskie žurnaly N. I. Novikova*, Moscow, 1951.

Makogonenko, G. P., *Novikov i russkoe prosveščenie XVIII veka*, Moscow, 1952.

Mel'nikova, N. N., *Izdanija napečatannye v tipografij Moskovskogo Universiteta XVIII veka*, Moscow, 1966.

N. I. Novikov i ego sovremenniki, Moscow, 1961.

Novikov, N. I., *Izbrannye sočinenija,* Moscow, 1951.

Rejser, S. A., *Xrestomatija po russkoj bibliografij s XI veka po 1917 g.,* Moscow, 1956.

Zdobnov, N. V., *Istorija russkoj bibliografij do načala XX veka,* 3rd ed., Moscow, 1955.

MARIANNA TAX CHOLDIN

NURSING LIBRARIES AND LITERATURE

Nursing

Nursing was established as a profession at the turn of the 20th century. Consequently, its professional literature still spans less than a 100-year period. However, changes in nursing and nursing education are now occurring rapidly, prompting reexamination of theory and practice. They include: (*a*) increased demands for nursing service, (*b*) new ways of meeting demands, (*c*) greater responsibilities for nursing administration, (*d*) higher levels of education and emphasis on continuing education, and (*e*) research done by nurses themselves rather than by nonnurses. These changes are producing a new nurse who is aware that a profession requires its own literature and improved information services.

The change in the nurse finds expression in new nurse practice acts, such as that of New York State, which defines the practice of nursing as a professional nurse as

> diagnosing and treating human responses to actual and potential health problems through such services as casefinding, health teaching, health counseling, and provision of care supportive to or restorative of life and well-being, and executing medical regimens prescribed by a licensed or otherwise legally authorized physician or dentist (*1*).

Nurses in the United States numbered over 1,127,657 in 1972, according to *Facts about Nursing* (*2*). They are by far the largest group of health professionals.

Nursing Libraries

Nursing libraries are libraries which serve nurses and collect materials in the field, print and nonprint, organize them, and disseminate information from them and other sources.

To most people, the term "nursing library" connotes the nursing school library, particularly the separate library maintained by a diploma school. In the simplest sense, this is a special library devoted to nursing, and appears as such in directories of medical libraries and so is easy to identify. A few separate nursing libraries exist in colleges and universities. But there are many collections which are significant parts of other libraries—hospital, medical center, or academic. No complete listing of these is available, but the National League for Nursing has directories of all nursing programs. We expect each to have, or have access to, library resources.

The term "nursing library" when used here without further qualification will include all collections of nursing literature, whether they exist separately or as parts of larger, integrated libraries.

As early as 1912, American nurse educators preferred voluntary accreditation; that is, by professional organizations rather than by government agencies. The National Nursing Accreditation Service, which was started in 1949, became part of the National League for Nursing in 1952. The accreditation does draw attention to libraries, but more specific requirements must be formulated and enforced to compel raised standards.

There are several types of educational programs for nurses, each with particular library needs: (*a*) diploma programs in hospital schools of nursing, (*b*) associate degree programs in junior or community colleges, (*c*) baccalaureate programs in colleges and universities, and (*d*) graduate education programs in universities, leading to master's and doctor's degrees (*3–9*).

Diploma programs, once the largest group, now number 428 in the United States (*9*). They provide education within the hospital, are usually 3 years in length, and qualify their graduates for the R.N. (*7*). Many hospitals have integrated their medical and nursing school libraries under the direction of one professional librarian, a practice to be encouraged because it minimizes duplication of resources and personnel, often making additional services possible.

The fastest recent growth has been in the area of associate degree programs (*5*). They now number 618, exceeding the number of diploma programs (*9*). They are usually 2 years in length and also qualify their graduates for the R.N. Very few such programs have separate libraries, although some share in allied health libraries. Most rely on general libraries in the junior or community colleges which house them. Many of these have limited medical and nursing collections, at least initially, so their students are forced to depend on visits to other libraries and interlibrary loans.

Baccalaureate programs offer subject majors in nursing in colleges or universities (*6*). Some schools, such as Boston College (Chestnut Hill, Massachusetts) and Hunter College (New York City) maintain separate nursing libraries. Others have combined resources in the college, university, or medical center library, such as that at Cornell Medical College in New York City. This type of combined library gives the student access to literature of other disciplines which are needed in addition to that of nursing.

Graduate programs in universities offer advanced degrees and greatly increase the demand for quality nursing materials in the university library.

The country's largest and most complete separate nursing school library is that of the Boston College School of Nursing. It has 31,500 bound volumes; subscribes to 570 periodicals, including all titles indexed in the *International Nursing Index;* and has 1,100 microfilm reels, 700 audiovisuals, and a depository collection of master's and doctoral dissertations. It serves as the primary nursing resource for NERMLS (New England Regional Medical Library Service) (*10*).

Most nursing libraries are connected with schools and concern themselves primarily with students. Hospital libraries, on the other hand, are beginning to pay attention to the needs of practicing nurses. Continuing education, in-service training, and the constant effort to improve patient care accentuate their library needs. The newest revision of the Brandon list, a standard selection tool for hospital librarians, recommends more nursing materials in recognition of the growing need for the hospital library to expand its collections in nursing (*12*).

Recognition of needs of the nursing staff by hospital libraries is a comparatively recent development. Many hospital libraries were literally "doctors' libraries" and no one else was admitted. Other libraries were supposedly open to all hospital personnel, but provided no specific nursing materials or had different levels of service for nurses and were consequently of limited use. These situations are beginning to disappear at last.

Only a few professional organizations maintain library resources. The Sophia F. Palmer Library of the American Journal of Nursing Company, New York City, is a strong editorial library of about 10,000 volumes, serving the publishing company and nursing organizations in its building. The library is quite complete for publications of nursing organizations and has a small, but excellent, historical collection. It holds copies of all periodicals indexed for the *International Nursing Index*, which the Journal Company publishes. Because of this unique collection, the Sophia F. Palmer Library serves as the nursing periodical resource for the New York–Northern New Jersey Regional Medical Library. A book catalog, representing its monograph holdings, is available from G. K. Hall & Company, Boston.

When the major national nursing organizations were housed in the same building, they used the Sophia F. Palmer Library. Staffs of the National League for Nursing and the National Student Nurses' Association continue to do so.

After its move to Kansas City in 1972, the American Nurses' Association (ANA) was forced to establish an administrative library. Although the ANA is the professional organization of nurses, its library has not been yet able to offer membership services. The administrative library of the New York State Nurses' Association (Albany, New York) is an example of a library maintained by a state association.

The National Library of Medicine (NLM) is mandated to serve nurses as well as other health professionals. Nursing as a subject is to be collected exhaustively, like medicine and dentistry. NLM cooperates with the American Journal of Nursing Company in publishing the *International Nursing Index* and retains a copy of each periodical issue indexed. All indexing information enters the MEDLARS data base and is available through MEDLINE.

Programs of the Regional Medical Libraries (RMLs) established by NLM are also mandated to serve nurses. The Medical Library Assistance Act of 1965 as amended "authorizes . . . Regional Medical Libraries which will facilitate access to biomedical literature for health professionals, researchers in biomedicine and students of health professions."

In some regions, nurses and nursing librarians participate on planning and advisory committees. However, since most contracting libraries in the RMLs are medical school libraries, it is understandable that they are weak in nursing resources and forced to look outside to provide nursing materials. Examples of nursing library involvement in RMLs because of such needs have been presented earlier in describing the Boston College School of Nursing library and the Sophia F. Palmer Library.

Unfortunately, the national nursing organizations have not been consistent in their choices of depositories for archives (*13–16*). Both the American Nurses' Association and the American Journal of Nursing Company have designated the Mugar Library, Boston University, as the National Nursing Archive. The National League for Nursing has made the National Library of Medicine its official depository (*15*). Additional archival collections exist throughout the country, many of them regional in nature.

Nursing Organizations as Publishers

It is helpful to distinguish between the national nursing organizations as publishers. The American Journal of Nursing Company (New York City) is the publisher of the *American Journal of Nursing (AJN)* and *Nursing Outlook*, although they are the professional and official publications, respectively, of the American Nurses' Association and the National League for Nursing. The Journal Company was set up originally by the ANA as an independent, nonprofit publishing company to preserve the editorial integrity of *AJN* and keep its publication on a businesslike basis.

In addition, the Journal Company publishes *Nursing Research*; *MCN: The American Journal of Maternal Child Nursing*; the *International Nursing Index*, in cooperation with NLM; and a series of books, the *Contemporary Nursing Series*. It is a major producer and distributor of audiovisuals. A catalog is available from its Educational Services Division (*36*).

The American Nurses' Association is the professional organization of nurses. No non-nurse is eligible for membership. ANA is the only American organization eligible to be a member of the International Council of Nurses. Its official publication is the *American Nurse*, as opposed to *AJN*, which is its professional publication. Its many other publications for the nurse are listed in its catalog (*37*).

A.N.A. Clinical Sessions have been published by Appleton-Century-Crofts, rather than by the ANA itself.

The National League for Nursing does not limit membership to nurses. Its particular interests, as reflected in *Nursing Outlook*, are education, administration, and public health. Most of its publications are in numbered series, making it possible for periodical indexes to include them. A catalog of league publications is available (*38*).

The American Nurses' Foundation, now in Kansas City, is the research arm of the American Nurses' Association. It publishes the *Directory of Nurses with Doctoral Degrees,* the only national directory of nurses, and *Nursing Research Reports.* Before its move to Kansas City, the foundation was responsible for preparation of the nursing abstracts which are published in *Nursing Research.*

The "directory issue" of the *American Journal of Nursing,* each April, lists international, national, and state organizations in nursing or of interest to nurses, including specialty organizations, government agencies, etc. *Nursing Outlook* carries similar directories twice a year. New publications of nursing and related organizations are listed in the back of each issue of the *International Nursing Index.*

The Interagency Council on Library Resources for Nursing

Increasing needs related to nursing libraries and literature and requiring cooperative action led to the founding of the Interagency Council on Library Resources for Nursing (ICLRN) in 1960. It consists of representatives from each of the national nursing organizations, the library associations, and other institutions with an active interest in nurses or nursing libraries, such as the hospital associations, the National Library of Medicine, and the Division of Nursing, Health Resources Administration, U.S. Department of Health, Education and Welfare. The council meets twice a year to identify needs and propose cooperative projects, to suggest action to other appropriate groups, to increase librarians' understanding of the needs of nurses (and vice versa), and to stimulate the professional to support nursing resources (*39*).

The ICLRN prepares library-oriented programs for nursing conventions and has been influential in producing many developments we now take for granted, such as establishment of the *International Nursing Index.* It authors the list "Reference Sources for Nursing," which its members revise every 2 years for publication in *Nursing Outlook.* The list suggests reference works of interest to nurses and nursing libraries and is not limited to nursing materials. It does not attempt to list current textbooks (*40*).

Development of Nursing Literature

Early nursing texts were written by physicians. Some antedate Florence Nightingale. *The Nurse's Guide* (1839), by Joseph Warrington, M.D., was subtitled *A Series of Instructions to Females Who Wish to Engage in the Important Business of Nursing Mother and Child in the Lying-In Chamber* (*17*).

Florence Nightingale was a prolific writer and her works, particularly *Notes on Nursing, What It Is and Is Not* (1859), are still quotable (*18*).

The establishment of the Florence Nightingale School in London in 1860 marked the beginning of formal education in nursing (*19*). Three hospital schools were founded in the United States immediately after the Civil War. By 1900 hospital schools numbered over 400.

Mary Roberts (*American Nursing*, 1954) reports that a list of 50 textbooks for schools of nursing was appended to a report of a committee of the Society of Superintendents in 1896 (*20*). Fewer than 12 of the 50 items were written by nurses, but it was a beginning of a professional literature. Two schools developed manuals which were widely used, Bellevue School of Nursing (1897) and Connecticut Training Schools for Nurses (1898).

The first textbook by an American nurse was *Textbook for Nursing for the Use of Training Schools, Families, and Private Students* (1885) by Clara Weeks Shaw (*21*). Isobel Hampton Robb followed with *Nursing; Its Principles and Practice* (1893) and *Nursing Ethics* (1901) (*22,23*). The first anatomy and physiology text by a nurse was written by Diana Kimber in 1894 (*24*). Lavinia Dock wrote the standard *Textbook on Materia Medica for Nurses* (1890) (*25*) and, with Adelaide Nutting, *History of Nursing; the Evolution of Nursing Systems from the Earliest Times to the Foundation of the First English and American Training Schools for Nurses* (1907–1912) (*26*). The latter work greatly influenced nursing's recognition as a profession.

Most textbooks are now written by nurses, but joint authorship by physicians is common.

An important nontextbook was *Reminiscences of Linda Richards, America's First Trained Nurse* (1911) (*29*).

The following publications were produced by leaders attempting to improve nursing practice and education. They recommended that education of nurses take place in institutions of higher learning: *Nursing and Nursing Education in the United States* (1923) (*27*), *Nurses, Patients and Pocketbooks* (1928) (*28*), *Program for the Nursing Profession* (1948) (*30*), *Nursing for the Future* (1948) (*31*), and the ANA's *Educational Preparation for Nurse Practitioners and Assistants to Nurses: A Position Paper* (1965) (*32*). Growing acceptance of their suggestions has led to the present trends: that is, establishing more associate degree programs and disestablishing diploma programs.

Toward Quality in Nursing (1963) was the result of a study commissioned by the U.S. Public Health Service to identify the role of government in assuring adequate nursing services (*33*). The Surgeon General's Report, as it is known, recommended a broad study of educational problems and led to the establishment of the National Commission for the Study of Nursing and Nursing Education. The commission produced *Abstract for Action* (1970) (*34*), known as the Lysaught Report, which defined four key problems with 15 specific recommendations. A series of publications culminated in the final report, *Abstract into Action* (1973) (*35*).

Very few books were written for practicing nurses, as opposed to students, before the late 1950s. They are still relatively few.

NURSING PERIODICALS

The first national nursing magazine was *Nursing Notes*, begun in 1887 and still published in England by the Royal College of Midwives as *Midwives Chronicle* *and Nursing Notes.* Also still in existence is *Nursing Mirror and Midwives Journal,* started in 1888.

In 1888 two magazines started in the United States, the short-lived monthly, *The Nightingale,* and *The Trained Nurse,* first American journal of any duration. In 1893, *The Trained Nurse* absorbed *Hospital Review.* It was called *Trained Nurse and Hospital Review* until 1950, when it became *Nursing World.* It ceased publication 10 years later, after absorbing several other magazines with short runs.

The *American Journal of Nursing,* professional publication of the American Nurses' Association, was started in 1900 with funds from individual nurses. It was hailed as the first voice of organized American nursing. The ANA managed to buy up all the stock, setting up the American Journal of Nursing Company to be its publisher.

In 1909, the Cleveland Visiting Nurse Association began the *Visiting Nurse Quarterly,* which became *Public Health Nurse Quarterly* when ownership was assumed by the National Organization for Public Health Nursing in 1912. In 1918 it became *Public Health Nurse,* and later, *Public Health Nursing.* An index to *Public Health Nursing* was recently published by the National League for Nursing (NLN) (*47*).

Public Health Nursing was replaced in 1953 by *Nursing Outlook,* official publication of the National League for Nursing.

Nursing Research, which appeared in 1953 (cosponsored by the ANA and NLN), is another Journal Company publication. It serves as a medium for dissemination of research results and includes a section of "Nursing Abstracts" in each issue.

RN Magazine, which began as a small hand-out in 1937, has endured and is a successful, full-sized commercial journal.

Three new journals appeared in 1962 and since that time the total has increased rapidly. Many newer journals meet needs of specialized groups, such as *AORN Journal,* official publication of the Association of Operating Room Nurses, which began as *OR Nursing* in 1960; *Heart and Lung,* sponsored by the American Association of Critical-Care Nurses since 1972; *Journal of Nurse-Midwifery,* published by the American College of Nurse-Midwifery since 1974 and earlier as their *Bulletin* (1955–1973); and *Cardiovascular Nursing,* published since 1965 by the American Heart Association's Subcommittee on Nursing.

Nursing, which began in 1971 as *Nursing '71,* has in a short time become a major commercial journal. It changes title with each year.

Two journals important to practical nurses are *Nursing Care,* official journal of the National Federation of Licensed Practical Nurses, which began in 1968 as *Bedside Nurse,* and the *Journal of Practical Nursing,* started by the National Association of Practical Nurse Education and Service in 1950 as *Practical Nursing.*

The National Student Nurses' Association has published its official journal, *Imprint,* since 1968. It was preceded by the monthly *NSNA Newsletter.*

The ANA's newspaper, *American Nurse,* contains original articles as well as news. Newsletters can be valuable information sources.

State nurses' associations publish magazines or newsletters which vary in frequency and quality according to the resources of each organization. Substantive articles in them are indexed. A complete listing is provided in the periodicals list in each issue of the *International Nursing Index* (*INI*).

International journals include the commercial *International Journal of Nursing Studies*, started in 1963, and the International Council of Nurses' *International Nursing Review*, which began in 1926 as *ICN*. The *Review* has incorporated *ICN Calling*, the council's newsletter.

By 1957 it was possible to identify 57 nursing magazines with national distribution, from throughout the world. They were from 34 different countries and most were sponsored by national organizations. The first volume of the *International Nursing Index*, which appeared in 1966, covered 167 titles (*41*). Today the number indexed is over 200 (*42*).

A listing of current periodicals, with names and addresses of publishers, appears in each issue of *INI*. Fourteen nursing journals are also indexed in *Index Medicus*. For easy identification, the 14 are starred in the *INI* list.

PERIODICAL INDEXES

Before 1956 there were no indexes specific to nursing. Indexing was becoming a major concern, because of the highly significant increase in journals and lack of efficient access to their contents (*43*).

The *Cumulative Index to Nursing Literature* was started as an in-house operation by the library staff at the Glendale Sanitarium and Hospital (Glendale, California) in 1956 and grew until today it is a current, bimonthly index with annual cumulation (*44*). It has good coverage of English-language nursing journals from throughout the world and some non-nursing journals, including some popular journals and some in allied health. In addition to indexing periodical articles, it provides references to selected pamphlets, audiovisuals, book reviews, and types of materials not otherwise indexed. It is the only index which covers the time period 1960–1965.

The *International Nursing Index* has been published by the American Journal of Nursing Company, in cooperation with the National Library of Medicine, since 1966 (*45*). It appears quarterly, with an annual cumulation, and indexes over 200 nursing titles. Its coverage is worldwide, including foreign-language materials. It also provides references to articles on nursing in non-nursing journals indexed for *Index Medicus* or any of its recurring bibliographies. Its data base is accessible on-line through MEDLINE and the SUNY (State University of New York)/Biocommunication Network.

The *Nursing Studies Index* (*NSI*) is a four-volume retrospective index, covering the years 1900 to 1959 (*46*). It has indexed materials highly significant to the history of nursing which might otherwise have been lost, much of it discovered through visits to libraries with significant collections. Combined in one section, it provides annotated references to books and pamphlets as well as periodical articles.

NSI was published by the Yale University School of Nursing (New Haven, Connecticut) and was supported in part by a grant from the U.S. Public Health Service.

The *Index to Public Health Nursing*, published by the National League for Nursing in 1974, is a retrospective index to one magazine, *Public Health Nursing*. It is invaluable as a source for materials on history of public health nursing.

REFERENCES

1. "Nurse Practice Act of New York State as Contained in Article 130 and 139 of Title VIII of the Education Law of New York State, Including Amendments Enacted through June, 1972," Article 139: Nursing, State of New York, Albany, N.Y., 1972.
2. American Nurses' Association, *Facts About Nursing, 74–75*, The Association, Kansas City, Mo., 1976, p. 2ff.
3. National League for Nursing, *State-Approved Schools of Nursing—R.N.*, 33rd ed. (NLN Publication No. 19–1568), The League, New York, 1975.
4. National League for Nursing, *State Approved Schools of Nursing—L.P.N./L.V.N.*, 17th ed. (NLN Publication No. 19–1569), The League, New York, 1975.
5. National League for Nursing, *Associate Degree Education for Nursing, 1974* (NLN Publication No. 23–1309), The League, New York, 1975.
6. National League for Nursing, *Baccalaureate Education in Nursing, 1975* (NLN Publication No. 15–1311), The League, New York, 1975.
7. National League for Nursing, *Diploma Programs in Nursing Accredited by the NLN—1975–76* (NLN Publication No. 16–1542R), The League, New York, 1974.
8. National League for Nursing, *Practical Nursing Career, 1975–76* (NLN Publication No. 38–1328), The League, New York, 1975.
9. Telephone conversation with Walter Johnson, Research Division, National League for Nursing, August 10, 1976 (unpublished).
10. Mary Pekarski, Letter, April 28, 1975 (unpublished).
11. "Boston Library Named ANA Depository" (News), *Amer. J. Nurs.*, **71**, 2090 (November 1971).
12. Alfred N. Brandon, "Selected List of Books and Journals for the Small Medical Library," *Bull. Med. Lib. Assoc.*, **63**, 149–172 (April 1975).
13. Catherine L. Callahan, "A Record of Nursing; Boston University Nursing Archive," *Nurs. Outlook*, **20**, 778–781 (December 1972).
14. "Plans to Preserve Nursing Memorabilia Are Discussed," *Nurs. Outlook*, **22**, (January 6, 1974).
15. Faye G. Abdellah, "National Library of Medicine Is Official National Nursing Archives" (Letter), *Nurs. Res.*, **24**, 64 (January–February 1975).
16. Interagency Council on Library Resources for Nursing, "Historical Materials in Nursing" (Letter); to be published in *Nurs. Res.*, **24**, (1975).
17. Joseph Warrington, *The Nurse's Guide; a Series of Instructions to Females Who Wish to Engage in the Important Business of Nursing Mother and Child in the Lying-In Chamber*, 1839.
18. Florence Nightingale, *Notes on Nursing, What It Is and Is Not*, Harrison, London, 1859. (Numerous reprints and several facsimile editions exist.)
19. The Nightingale Training School for Nurses, *The Nightingale Training School, St. Thomas Hospital, 1860–1960*, London, 1960 (privately printed).
20. Mary Roberts, *American Nursing; History and Interpretation*, Macmillan, New York, 1954, p. 63.
21. C. W. Shaw, *Textbook for Nursing for the Use of Training Schools, Families, and Private Students*, 1885.

22. Isobel H. Robb, *Nursing; Its Principles and Practice for Hospital and Private Use,* Saunders, Philadelphia, 1893.
23. Isobel H. Robb, *Nursing Ethics for Hospital and Private Use,* E. C. Koeckert, Cleveland, Ohio, [1900].
24. Diana C. Kimber, *Text-book of Anatomy and Physiology for Nurses,* Macmillan, New York, [1893].
25. Lavinia Dock, *Textbook of Materia Medica for Nurses,* Putnam, New York, 1890.
26. M. Adelaide Nutting and Lavinia Dock, *History of Nursing; the Evolution of Nursing Systems from the Earliest Times to the Foundation of the First English and American Training Schools for Nurses,* 4 vols., Putnam, New York, 1907–1912.
27. Committee for the Study of Nursing Education, *Nursing and Nursing Education in the United States; Report of the Committee . . .* and *Report of a Survey by Josephine Goldmark,* Macmillan, New York, [1923], p. 32.
28. Committee on the Grading of Nursing Schools, *Nurses, Patients and Pocketbooks; Report of a Study of the Economics of Nursing,* The Committee, New York, Mary Agnes Burgess, Director, [1928], p. 447.
29. Linda Richards, *Reminiscences of Linda Richards, America's First Trained Nurse,* Whitcomb & Barrows, Boston, [1911].
30. Eli Ginzberg, *A Program for the Nursing Profession,* Macmillan, New York, 1948.
31. Esther L. Brown, *Nursing for the Future; a Report Prepared for the National Nursing Council,* Russell Sage Foundation, New York, [1948], p. 138.
32. American Nurses' Association, *Educational Preparation for Nurse Practitioners and Assistants to Nurses; a Position Paper,* The Association, New York, 1965, p. 10.
33. U.S. Public Health Service, Surgeon General, *Toward Quality in Nursing; Needs and Goals. Report of the Surgeon General's Consultant Group on Nursing* (Public Health Service Publication No. 992), Government Printing Office, Washington, D.C., 1963.
34. National Commission for the Study of Nursing and Nursing Education, *An Abstract for Action,* Jerome P. Lysaught, director, McGraw-Hill, Blakiston Publication, New York, [1970].
35. National Commission for the Study of Nursing and Nursing Education, *Abstract into Action,* Jerome P. Lysaught, director, McGraw-Hill, Blakiston Publication, New York, [1973].
36. American Journal of Nursing Co., Educational Services Division, *Catalog 75; Audiovisuals, Publications,* American Journal of Nursing Co., New York, 1974.
37. American Nurses' Association, *Publications List, 1972–1973,* The Association, Kansas City, Mo., 1972.
38. National League for Nursing, *Publications Catalog, 1974–75,* The League, New York, 1975.
39. Interagency Council on Library Resources for Nursing, [Fact Sheet], March 1975 (mimeographed). (Available from Librarian, American Journal of Nursing Co., 10 Columbus Circle, New York, N.Y. 10019.)
40. Interagency Council on Library Resources for Nursing, "References Sources for Nursing," *Nurs. Outlook,* **24,** 317–322 (May 1976).
41. "Nursing Periodicals," *Intern. Nurs. Index,* **1,** iv–ivc (1966 cumulation).
42. "Nursing Periodicals," *Intern. Nurs. Index,* **10,** iv–ivf (1975 cumulation).
43. Pings, Vern M., *A Plan for Indexing the Periodical Literature of Nursing,* American Nurses' Foundation, New York, 1966.
44. *Cumulative Index to Nursing Literature,* Glendale Adventist Hospital, Glendale, Calif., 1956–. (Five bimonthlies, with annual cumulation.)
45. *International Nursing Index,* American Journal of Nursing Co., New York, 1966–. (Quarterly with annual cumulation.)
46. *Nursing Studies Index,* Lippincott Co., Philadelphia, 1963–1972. (Four-volume set covers 1900–1959.)

47. *Index to Public Health Nursing Magazine, 1909–1952,* National League for Nursing, New York, 1974.

BIBLIOGRAPHY

Annan, Gertrude L., "The Library—A Force for Better Nursing Care," *Nurs. Outlook,* **12,** 56–58 (April 1964).

Cooper, Signe S., "The Nursing Literature," *J. Continuing Educ. Nurs.,* **1,** 35–42 (September 1970).

Cunningham, Elizabeth V., "A Critique of the Two Indexes to Nursing Literature," *Nurs. Forum,* **6**(4), 352–362 (1967).

Day, Philip E., "The International Nursing Index," *Amer. J. Nurs.,* **66,** 783–786 (April 1966).

Grandbois, Mildred, "The Nursing Literature Index: Its History, Present Needs, and Future Plans," *Bull. Med. Lib. Assoc.,* **52,** 676–683 (October 1964).

Henderson, Virginia, "Implication for Nursing in the Library Activities of the Regional Medical Programs," *Bull. Med. Lib. Assoc.,* **59,** 53–64 (January 1971).

Henderson, Virginia, "Library Resources in Nursing; Their Development and Use," Parts 1, 2, and 3, *Intern. Nurs. Rev.,* **15,** 164–182, 236–247, 348–358 (April, July, and October 1968).

Kelly, Dorothy N., "The National Library of Medicine; Resource for All Professionals," *Superv. Nurse,* **1,** 42–45 (June 1970).

McDowell, Wanda, "Seeking and Using Nursing Literature" (editorial), *Nurs. Res. Rept.,* **2,** 2 (June 1967).

Miller, Lois B., "The Sophia F. Palmer Memorial Library," *Nurs. Outlook,* **10,** 674–675 (October 1962).

Miller, Lois B., and Edith N. Rathbun, "Growth and Development of Nursing Literature," *Bull. Med. Lib. Assoc.,* **52,** 420–426 (April 1964).

Mink, Geraldine, "Nursing Research and Library Service," *Nurs. Res.,* **3,** 17–20 (June 1954).

"National Library of Medicine," *J. Continuing Educ. Nurs.,* **2,** 21–22 (January–February 1971).

Notter, Lucille E., "Information Needs and the Nursing Profession," *Nurs. Res. Rept.,* **4,** 2 (June 1969).

Notter, Lucille E., "Information Service in Nursing" (editorial), *Nurs. Res.,* **19,** 483 (November–December 1970).

Notter, Lucille E., "MEDLINE—Newest Service in the Medical Information Network" (editorial), *Nurs. Res.,* **21,** 101 (March–April 1972).

Smith, Kathryn M., "Trends in Nursing Education and the School of Nursing Librarian," *Bull. Med. Lib. Assoc.,* **57,** 362–367 (October 1969).

Taylor, Susan D., "Bibliography on Nursing Research, 1950–1974," *Nurs. Res.,* **24,** 207–225 (May–June 1975).

Taylor, Susan D., "How to Search the Literature," *Amer. J. Nurs.,* **74,** 1457–1459 (August 1974). Includes Bibliography on Use of Literature Resources in Nursing, p. 1459.

Thompson, A. M., "Literature of Nursing," *Nurs. Times,* **58,** 885 (July 13, 1962).

Treece, Eleanor W., "The Library from the Nursing Educator's Point of View," *Bull. Med. Lib. Assoc.,* **59,** 444–449 (July 1971).

JACQUELINE PICCIANO

O

OBSCENITY

See *Censorship, Contemporary and Controversial Aspects of; Erotica*

OFFICE OF EDUCATION (U.S.), OFFICE OF LIBRARIES AND LEARNING RESOURCES

Program Management

Over a century has passed since the legislated mandate for the Office of Education (OE) was enunciated. It is perhaps fitting then that with the passage of the Education Amendments of 1974 (PL 93–380), a requirement was added that OE establish an Office of Libraries and Learning Resources to administer "all programs in the Office of Education related to assistance for, and encouragement of, libraries and information centers and educational technology." This provision established by law a firm organizational status, as well as bringing together permanently related program areas in OE—libraries and education technology.

As far back as 1938, Congress gave libraries a position in the structure of U.S. education by establishing a library services unit in the U.S. Office of Education. In fiscal year 1957, Congress made the initial appropriation of $2.05 million in support of the Library Services Act for rural public library services. During the next decade appropriations steadily increased and the magnitude of administrative oversight grew.

It was in the 1960s that the federal support for library programs was expanded and a major step was taken by the U.S. Office of Education toward building a strong national leadership role in relation to the library and learning resource programs listed below.

Public libraries—Library Services and Construction Act, PL 84–597, as amended:
- Title I, Public Library Services, 1957–
- Title II, Public Library Construction, 1965–1975 (no funds appropriated after FY 75)

Title III, Interlibrary Cooperative Services, 1967–
Title IV-A, State Institutional Library Services, 1967–1971 (combined with LSCA Title I)
Title IV-B, Library Services to Physically Handicapped, 1967–1971 (combined with LSCA Title I)
Title IV, Older Reader Services, 1973– (no funds appropriated)

School libraries and educational media centers—Elementary and Secondary Education Act, PL 89–10, as amended:
Title II, School Library Resources, Textbooks, and Other Instructional Materials, 1966–
Title IV-B, School Libraries and Learning Resources, 1976– (PL 93–380, which consolidates ESEA II, NDEA III-A, and the Guidance Counseling and Testing portion of ESEA III; 100% consolidation will be effective in FY 1977)

National Defense Education Act, PL 85–864, as amended:
Title III-A, Strengthening Instruction in Academic Subjects, 1959– (PL 93–380, which consolidates ESEA II, NDEA III-A, and the Guidance Counseling and Testing portion of ESEA III; 100% consolidation will be effective in FY 1977)
Section 305 of Title III-A, School Equipment Loans to Nonprofit Private Schools, 1959–1975 (program obligations relating to 10-year period or 1985)

Academic libraries, training, research and demonstration, and equipment—Higher Education Act of 1965, PL 89–329, as amended:
Title II-A, College Library Resources, 1966–
Title II-B, Library Career Training, 1966–
Title II-B, Library Research and Demonstration, 1967–
Title VI-A, Undergraduate Instructional Equipment, 1966–

With the establishment of the Office of Libraries and Learning Resources (OLLR) in the Office of Education on January 13, 1975, the mandate of Congress to reinforce organizational leadership for these programs was carried out. With this mandate has come the creation of two new divisions under OLLR—the Division of Library Programs and the Division of Educational Technology (Figure 1). The OLLR management responsibility has also been broadened in the field of educational technology to include the following programs:

Educational technology—Communications Act of 1934, Title III:
Part IV of Title III amended by 87–477, further amended, Grants for Noncommercial Educational Broadcasting Facilities, 1963–
Special Projects Acts, PL 93–380
Educational Television Programming, 1975–

Highlights of Program Activities

PUBLIC LIBRARY SERVICES

In recognition of the need for federal, state, and local commitments to bring library services and resources closer to millions of Americans, Congress passed the Library Services Act in 1956. Although limited specifically to the development of public library services in rural areas having less than 10,000 people, the act was the first major legislation to authorize grant-in-aid support to the states for

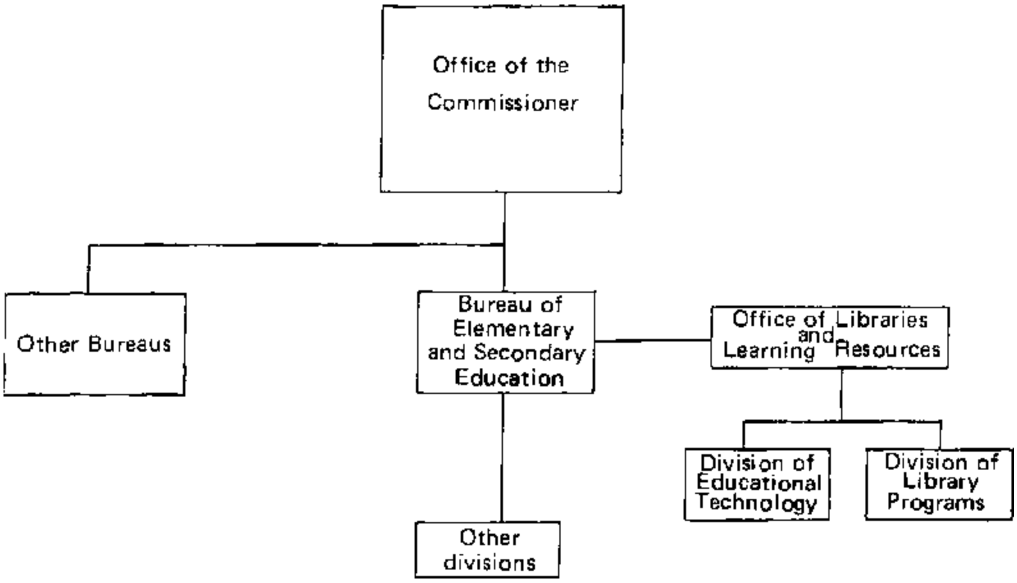


FIGURE 1. *Department of Health, Education, and Welfare, Education Division, Office of Education.*

public library development. At that time, only 23 states had public library grant-in-aid programs totaling $5 million. In 1976, with a broadened legislation and purpose, the LSCA has served as an incentive where 38 states have grant-in-aid programs with annual appropriations exceeding $101.6 million. Since 1956 over $2 billion has been appropriated as state and local matching funds for this program, or $4 state and local for each $1 from LSCA.

Today about 95% of the American population has access to public library services. In 1976 LSCA also continued to serve 29 million economically disadvantaged persons; 800,000 prisoners, patients, and other state-institutionalized persons; and 480,000 blind and physically handicapped persons.

PUBLIC LIBRARY CONSTRUCTION

A total of $174.1 million has been appropriated for this program since 1966. Over 2,000 construction and renovation projects have been supported through fiscal year 1975 when congressional allocations ceased.

INTERLIBRARY COOPERATIVE SERVICES

In 1966 an Interlibrary Cooperation title (LSCA, Title III) provided for establishing and maintaining cooperative networks involving at least two different types of libraries. Since 1967, nearly $27 million from this program has been utilized by the states for these activities. In 1975, 7,575 libraries were involved in 130 interlibrary cooperative projects. Over 50% of these projects involved telecommunication networks for reference and bibliographic services and interlibrary loan activities.

SCHOOL LIBRARY RESOURCES

This program has provided nearly $1 billion to public and private elementary and secondary schools for library and media materials since 1966. Over 90% of the nation's private and public schools, with 46 million students, are served by these materials. The high participation rate of children in nonpublic schools is a feature of this program not common to other federal education programs.

SCHOOL EQUIPMENT AND MINOR REMODELING

Since 1959, over $1 billion has been expended by the states to strengthen school instruction through the purchase of equipment and materials and through minor remodeling of facilities. In 1975, 9,800 local education agencies participated in this program, benefiting over 39 million students.

Although numerous loans to private schools were also authorized under this program, the new consolidation of Part B, Title IV, ESEA will terminate the direct loan program to private schools. The 10-year repayment obligations, however, remain under the management of OLLR until 1985.

COLLEGE LIBRARY RESOURCES

Virtually all of the nation's academic institutions received a grant for purchasing library materials. These amounts have varied over the last few years, but are generally up to the amount of $5,000. Since 1966 over $150 million has been used for these purposes. Approximately 25% of these purchases are for nonprint materials, such as films, filmstrips, recordings, tapes, and microforms.

LIBRARY CAREER TRAINING

Nearly $40 million has been used to support the training of 12,657 library professionals and paraprofessionals in short- and long-term institutes since 1966. Over 3,000 graduate fellowships have also been awarded over this period. In 1974, 82% of the fellowship awards made by training institutions were to ethnic minorities.

LIBRARY RESEARCH AND DEMONSTRATIONS

Since 1967, $22.4 million has been used for research and demonstrations relating to the improvement of library services. Recently, the program has utilized its discretionary monies by supporting projects relating to: (*a*) institutional cooperation (45%), (*b*) more efficient use of library systems (30%), (*c*) the improvement in training for library-related careers (10%), (*d*) needs assessments for libraries and information centers (10%), and (*e*) planning and research in the field (5%).

ACADEMIC INSTRUCTIONAL EQUIPMENT

Approximately $117.4 million has been alloted since 1966 to academic institutions for the purchase of general instructional equipment, closed circuit television equipment, and some minor remodeling accompanying these purposes. Particularily significant is the climbing rate of expenditures for closed circuit TV: 1966–1975: 12%; 1975: 19%; 1976, projected: 20%.

EDUCATIONAL BROADCASTING FACILITIES (PUBLIC BROADCASTING)

Between 1963 and 1975, over $106.5 million has been appropriated for equipment used for noncommercial radio and television broadcasting stations. These monies have stimulated more than $41 million in nonfederal matching funds. Including broadcast costs not eligible for federal participation (land, buildings, operation of station, etc.), it is estimated that each federal dollar has stimulated $11 in local, state, and private funds. Since 1963, the number of noncommercial television stations in operation has increased from 76 to 246. Federal assistance was first made available to radio stations in 1967 when there were only 67 full-service radio stations on the air. Today 166 full-service radio stations are serving communities.

EDUCATIONAL TELEVISION PROGRAMMING

Prior to 1975, funds from the program supported the creation and production of "Sesame Street" and the "Electric Company." Approximately 50% of the overall budget of the Children's Television Workshop (producers of these two programs) has been derived from this funding authority. OE contributions since 1968 total approximately $29.5 million. These funds were derived from the Cooperative Research Act. Presently, these monies exist under a new authority created by the Education Amendments of 1974, Special Projects Acts.

Present Program Goals

The Office of Libraries and Learning Resources has a mandate to effect better coordination and utilization of the nation's libraries and instructional resources, to enhance learning, and improve the present information services for children, high school and college students, and adults through these legislative authorities. More specifically through the laws it administers, it has the responsibility to:

Improve public services, including services to the state institutionalized
Stimulate interlibrary cooperative activities
Provide school library resources and instructional equipment to public and private elementary and secondary school students and teachers
Provide college library resources and instructional equipment
Aid in the training of library personnel

Assist state, local, and federal government agencies and officials, librarians and information scientists, library educators, professional associations, citizen groups, and others in their efforts to develop and disseminate successful library practices
Provide equipment for noncommercial radio and television stations
Support the application of validated instructional techniques, including educational television programming

With the realization that the federal dollar in support of these efforts amounts to approximately 5% of the total local and state support for such activities, the OE must continue to channel its programs, as the legislation permits, into becoming "incentive capital" to achieve nationwide improvements. In effect, it is expected to be one of the catalysts for change in the fields of librarianship and educational technology.

ROBERT KLASSEN

OFFICE FOR LIBRARY EDUCATION, ALA

See also *American Library Association*

During the decade of the 1960s, the profession of librarianship began to be concerned about its personnel. The recruitment, education, placement, and welfare of librarians attracted the increasing attention of library educators as well as practitioners. One evidence of this general concern was the establishment within the American Library Association (ALA) of the Office for Library Education (OLE) in 1966.

For several years momentum had been growing for such an agency. In April 1962, nearly 90 participants attended a 4-day Institute on the Future of Library Education at the library school of Western Reserve University, Cleveland. Cosponsored with the Library Services Branch of the U.S. Office of Education, the institute proposed that the ALA seek funding for "the study and development of a national plan to develop library schools . . . (*1*). The Commission on a National Plan for Library Education which resulted took shape in early 1963. It eventually consisted of about 50 members who labored to "reassess the needs of American Libraries and related institutions for professional personnel in the years immediately ahead, and to make recommendations appropriate to those needs for the selection, education, and utilization of professional personnel" (*2*). A 2-year grant totaling $15,000 from the H. W. Wilson Foundation supported the effort. The final report recommended that ALA create a "center for research and experimentation in library education and personnel administration."

More than 2 years later the Office for Library Education began on September 1, 1966, with Dr. Lester Asheim as director. In 1965 the H. W. Wilson Foundation had aided its establishment by providing a $75,000 grant over 6 years to be matched by the ALA to support "an enlarged ALA program in library education and related fields" (*3*). After that period, the association agreed to assume complete support. In the words of its director, the stated purpose of the office was to "promote better coordination of the several programs within the Association which are devoted to education for librarianship . . . not only those activities which fall directly in the area of formal classroom teaching, informal training and continuing education programs, but also such related activities as accreditation, recruitment and the utilization of manpower" (*4*).

While the OLE did not displace any existing units within the ALA, it helped to unify efforts as a kind of clearinghouse for information about library education. Asheim was able to fill staff positions for the Library Education Division and for the Committee on Accreditation, the former having been vacant since the spring of 1963. Agnes Reagan, who served successfully in both capacities, became the assistant director for accreditation in 1969. Both groups were able to accomplish more than previously. With the establishment of the Office for Library Education, the Commission on a National Plan for Library Education asked to be discharged on the grounds that a major part of its recommendations had been met by the creation of the OLE, and that the objectives of the commission would be better served by the office than by the large and unwieldy group as then constituted. A smaller body, recruited in part from members of the commission and representing a variety of professional interests, was appointed to serve in an advisory capacity to the office, first as a special and then as a standing committee of the association.

The major influence of the OLE was the public relations and consulting activities of its director, which included addresses to library associations and library schools, consultation with library school personnel, liaison meetings with representatives from other agencies within and outside the profession, and personal consultations with visitors from other countries. Dr. Asheim and his staff sought to raise the visibility of library education in the eyes of the profession and the general educational public (*5*).

The most far-reaching accomplishment of the OLE was the formation of the statement of "Library Education and Manpower" and its official acceptance by ALA as policy in June 1971 (*6*). This much-discussed document—which recommended "categories of library manpower, and levels of training and education appropriate to the preparation of personnel for those categories"—was the result of a 2-year consultative effort and was seen by the OLE staff as an instrument for carrying out the original mandate of the Commission on a National Plan for Library Education in the areas of selection, education, and utilization of library personnel. (Before the creation of the OLE, the commission had changed its name to the Commission on National *Planning* for Library Education, to make clear its desire to promote coordination and planning, rather than a monolithic, mandated, single, nationwide *plan;* and it was in this more liberal context that the "Manpower Statement" was conceived.)

Following its fourth year of operation (1969–1970), the position of the OLE deteriorated for several reasons. First, during 1970 and 1971 the recommendations of the Activities Committee on New Directions for ALA (ACONDA) and the Ad Hoc Council Committee on ACONDA (ANACONDA) were debated by the association's membership and council. A major recommendation on manpower was to:

> Combine ALA's existing staff activities relating to the personal welfare of librarians, to library education and training, and to recruitment into a new Office of Library Manpower, to be responsible for (a) programs relating to all aspects of library manpower as specified elsewhere in this report, including, but not limited to, recruitment, education and training, salaries, status, welfare, employment practices, tenure, ethics, and other personnel concerns; (b) the establishment of standards; (c) the development of sanctions for enforcement of policies and standards (*7*).

Second, in early 1971, Dr. Asheim announced his resignation as director, effective May 31, 1971; the possibility of an early replacement for him appeared poor. Third, a financial crisis at ALA prompted the rejection of all budget requests by the OLE for the fiscal year 1971–1972 and the freezing of the positions of office director and secretary for the indefinite future. Thus, the H. W. Wilson Foundation support having expired, the office effectively ceased on August 31, 1971, though it continued for some time to be listed as a unit of ALA.

While the reorganization of ALA was creating the new Office of Library Personnel Resources (OLPR), the Advisory Committee of the former OLE tried to keep library education as a major focus for concern and functioned until 1973. At that time the committee was designated a subcommittee of the advisory body of the OLPR. Its sole purpose henceforth was to advise on the study of education for librarianship being carried out by Dr. Ralph Conant, a former member of the earlier committee. The need for the study had grown out of discussions of the Advisory Committee in 1968 and 1969, and Conant was asked to draw up a proposal. In 1973 the H. W. Wilson Foundation awarded a 2-year $130,000 grant for the study to be administered by the ALA (*8*).

In sum, the Office for Library Education was an experiment in coordination of library education efforts within ALA. Its potential, while realized in part, was limited and finally cut short because of changing emphases of the library profession and its major association.

REFERENCES

1. "Suggestions, Recommendations, and Proposals," *J. Educ. Librarianship*, **3**, 53–60 (Summer 1962). Entire issue is entitled "The Future of Library Education: Proceedings of an Institute," edited by Frank L. Schick and Ruth Warneke.

2. "Logsdon to Head ALA Commission on National Plan for Library Education," *Lib. J.*, **88**, 744 (February 15, 1963); and "Commission on a National Plan for Library Education," *ALA Bull.*, **58**, 481 (June 1964).

3. Lester Asheim, "The Office for Library Education of the American Library Association," *Bowker Annual of Library and Book Trade Information, 1967*, Bowker, New York, 1967, pp. 123–124.

4. Ref. *3*.

5. American Library Association, Office for Library Education, *Annual Reports*, 1966–1967 through 1970–1971.

6. "Library Education and Manpower," *Amer. Lib.*, **1**, 341–344 (April 1970). Reprinted as separate report after June 1970.

7. "Recommendations from ANACONDA," *Amer. Lib.*, **2**, 93 (January 1971).

8. See American Library Association news release, June 1974, on the Study of Education for Librarianship; and "Ralph Conant—In Pursuit of Library Education," *Amer. Lib.*, **4**, 633 (December 1973).

DONALD G. DAVIS, JR.

OFFICE OF TECHNICAL SERVICES

See *Clearinghouse for Federal Scientific and Technical Information*

OFFICIAL DOCUMENTS

Under the word "documents" in *A New English Dictionary on Historical Principles* is one definition for "official documents" as "official publications" (*1*). Without being able to trace such use of the term retrospectively, even in France, an administrative official on the staff of the Ministère de l'Intérieur, Jean Pierre de La Peyrie, born in 1813, used the term "documents officiels" as "official publications" in 1848 (*2*).

As Frans Vanwijngaerden, chief of the Belgian International Exchange Bureau, has shown in his paper on Belgian national official publications in 1974 (*3*), the Belgian government—as the result of participation in the Universal Exhibition at Paris in 1867—became interested in promoting the international exchange of publications and held three international conferences. These resulted finally in the signing at Brussels in 1886 of two conventions for the international exchange of official documents and scientific and literary publications by the governments of Belgium, Brazil, Italy, Portugal, Serbia, Spain, Switzerland, and the United States of America. In the first convention, the second article is as follows:

> The publications which the contracting States agree to exchange are the following:
>
> 1st. The official documents, parliamentary and administrative, which are published in the country of their origin.
>
> 2nd. The works executed by order and at the expense of the Government (*4*).

Thus, "official documents" and its equivalent in the languages of the contracting states became the term to be used for the present "government publications" and was taken over at various times by the following states in their official languages as they subsequently joined the convention: Argentina, China, Czechoslovakia, Dominican Republic, Egypt, Hungary, Latvia, Paraguay, Poland, Romania, and Uruguay.

In the meantime, at the Second International Conference of American States (Mexico City, Mexico, January 27, 1902), "A Convention relative to the exchange of official, scientific, literary and industrial publications" was concluded by delegates for the following countries: Argentine Republic, Bolivia, Colombia, Costa Rica, Chile, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay, and the United States of America (5). In this convention, "official publications," not "documents," is defined as:

> Parliamentary, administrative and statistical documents which may be published in each one of the contracting countries.

Even as late as 1942 in France, Jacques de Dampierre, an archivist who had had experience in the administrative service and been delegated to systematize and record current French government publications, prepared for the first time in France a comprehensive manual, *Les publications officielles des pouvoirs publics,* which has often escaped attention owing to having been published at Paris during the Second World War (6). In his preface, de Dampierre presents briefly a definition in the following terms:

> Toute définition implique une sérieuse connaissance préalable de l'objet à définir, la rigueur de celle-là dépendant directement de l'étendue de celle-ci. On pourrait donc trouver paradoxal de poser *a priori,* au début d'une étude des publications officielles, une définition que cette étude a precisément pour premier objet de dégager. Mais tout lecteur est en droit de demander au titre d'un livre une notion déjà nette de sujet que l'on y traite et, s'il s'agit comme ici de matières mal connues, il lui plaît de trouver dès les premières pages, à tout le moins une explication sommaires de la tâche que l'auteur s'est proposé d' accomplir.
>
> C'est donc pour répondre à ce juste souci que l'on croit devoir déclarer ici, sans plus attendre, avoir entendu par "Publications officielles des pouvoirs publics français" l'ensemble des documents reproduits en nombre, à l'aide d'un quelconque des procédés d'expression graphique de la pensée, soit par, soit pour l'unt des assemblé élues ou des administrations publiques de la France et de son empire, aux fins de garder et faire connaître leurs lois et règlements, les éléments techniques de leurs activités, parfois aussi les motifs de leur action et les résultats d'intérêt général obtenues par les travaux de leurs services.*

Dampierre himself died in the meantime, and did not live to see systematic current recording of the "publications officielles" carried into effect on a more modest plan in 1950 as a section of the current national bibliography.

* Editor's translation (J.E.D.): Every definition implies a serious knowledge prior to the object of the definition, the rigor of the one depending on the understanding of the other. One might find it paradoxical to pose at the beginning of a study of official publications a definition which it is the primary purpose of the study to reveal. But every reader has the right to ask of the title of a book an already distinct notion of the subject of which the book treats, and, if he is agitated here by matters little known, he is pleased to find in the first pages at least a summary explanation of the task the author proposes to accomplish.

It is therefore in order to respond to this just concern that the author believes it his duty to declare here, without further delay, that by "the official publications of the French government," he understands the collection of documents reproduced in many copies with the help of some graphic process either by or for one of the elected assemblies or the public administrations of France and its empire for the purpose of preserving and making known its laws and regulations, the technical elements of its activities, possibly also the motives of its action and the results of general interest obtained by the efforts of its services.

As to the United States itself, the Public Documents Division in the Department of the Interior had its beginning in 1859, and a superintendent of public documents was appointed in 1869 (7). Despite this use of "public documents" in the Department of the Interior, Benjamin Perley Poore's *A Descriptive Catalogue* (1885) uses the term "government publications."

Then, the Printing Act of January 12, 1895, created the office of the Superintendent of Documents at the Government Printing Office, established the *Monthly Catalog of Public Documents* and the biennial *Document Catalog* as the permanent records, and abolished the Superintendent of Public Documents in the Department of the Interior.

In 1911, the following definition of "public document" appeared (*8*):

> At the very outset it seems desirable to trace the legislative definitions of the term "public document" and then to define its use in this *Checklist,* since in collecting a library or making catalogues or lists of public documents, the ever recurring question is "Which are and which are not public documents?"
>
> Since 1861, the date of establishment of the Government Printing Office, the decision is an easy one, for, with but few exceptions, as when the publishing office has prevailed upon the Public Printer to omit the official imprint, or in cases of works published but not printed by the Government, all issues are imprinted "Washington, Government Printing Office." For the period prior to 1861, it is more difficult to determine just what publications should be included in the library and lists.
>
> The term "public document" was first legally defined in sec. 13 of chapter 63, Laws of 29th Congress, 2d session, approved Mar. 3, 1847, as follows: "Such publications or books as have been or may be published, procured, or purchased by order of either House of Congress, or a joint resolution of the two Houses, shall be considered as public documents."
>
> By act approved June 23, 1874, Laws of 43d Congress, 1st session, sec. 13 of chapter 456, this definition is abridged to the following: "The term 'public document' is hereby defined to be all publications printed by order of Congress or either House thereof." This definition was made in relation to postage and is certainly most inadequate.
>
> The practice of the Office of the Superintendent of Documents, officially adopted, as authorized by law, in compiling its catalogues of the public documents of the United States, and further legalized by many years of unqualified acceptance by all branches of the Federal Government, has been thus formulated: "Any publication printed at Government expense or published by authority of Congress or any Government publishing office, or of which an edition has been bought by Congress or any Government office for division among Members of Congress or distribution to Government officials or the public, shall be considered a public document." Thus it will be seen that a very liberal view has been taken, and although it has been ruled to debar any and all publications which, however closely allied to the operations of the Government, were not found to have been printed or purchased by it, some exceptions have been made where there was doubt as to the publisher.

In 1941, "government publications" replaced "public documents" in the title of the *Monthly Catalog*. At the same time, the biennial *Document Catalog* ceased to appear as the permanent record.

Indeed, the terms "public documents," and "documents" and "official documents," do still seem to have attractive qualities, making them rather difficult to replace entirely, as witness the use by a group of the American Library Association beginning in 1972 for a periodical of *Documents to the People.*

REFERENCES

1. *A New English Dictionary on Historical Principles*, Oxford, 1897, Vol. 3, D, p. 573.
2. *Bibliographie administrative . . .*, Joubert, Paris, 1848, xii, 208 pp.
3. *ASLIB Proc.*, **26**(7/8), 267–273 (1974).
4. U.S. Congress. Senate, 49th Congr., 1st sess. Executive E (2).
5. U.S. Congress. Senate, 57th Congr., 1st sess. Executive T.
6. *Les publications officielles des pouvoirs publics*, Picard et fils, Paris, 1942, 628 pp.
7. U.S. Superintendent of Documents, *Checklist of United States Public Documents, 1789–1909*, 3rd ed. rev. and enl., Washington, 1911, Vol. 1, pp. 458–459.
8. Ref. 7, p. vii.

JAMES BENNETT CHILDS

OFFICIAL GAZETTES

Under "gazette" in *A New English Dictionary on Historical Principles*, there is a special definition as "one of the three official journals, *London Gazette, Edinburgh Gazette, Dublin Gazette,* hence official gazette for the official journal of any government" (*1*). This would indeed be not only national governments, but regional, state, departmental, provincial, and even city governments, each with differences as to contents. Further, some of these official gazettes such as the *London Gazette* and that of Spain, *Boletín oficial del Estado*: *Gaceta de Madrid*, have a long history, these two having their origin in the second half of the 17th century. Probably the most extensive listing of official gazettes in any one place has been at the beginning of each jurisdiction, even subordinate jurisdictions, in Winifred Gregory's *List of the Serial Publications of Foreign Governments, 1815–1931* (*2*).

In 1930, the League of Nations Library (Geneva) began—originally as a supplement to each issue of its *Liste mensuelle d'articles sélectionnés* [Monthly List of Selected Articles]—a list entitled *Traités internationaux et actes législatifs* [International Treaties and Legislative Measures], later entitled *Répertoire de traités internationaux et d'actes législatifs* [Chronology of International Treaties and Legislative Measures], which continued for 10 years.

In 1935, the League of Nations Library recorded the nonlegal contents of the official gazettes in No. 4 (24 pp.) of its *Listes bibliographiques* [Miscellaneous Bibliographies] under the title of *Répertoire des données publiées regulièrement dans les journaux officiels* [Analysis of Material Published Regularly in Official Gazettes].

In 1937, at the World Congress of Universal Documentation (Paris, August 16–21), Dr. T. P. Sevensma, librarian of the League of Nations, 1929 to 1939, with his restless and tireless interest in library problems and in the use of library materials, presented a contribution entitled "L'Analyse des publications officielles" (*3*). As Dr. Sevensma stated:

> Parmi les publications gouvernementales, les journaux officiels des divers pays ont une importance spéciale, étant donné qu'ils constituent la publication gouvernementale la plus largement diffusée. Pour des raisons historiques ou autres, ces journaux officiels sont devenues des recueils d'information les plus diverses, variant grandement selon les pays. On y trouve naturellement les lois et décrets et autres informations officielles du gouvernement, et pour certains pays, les procès-verbaux parlementaires, pour d'autres, les arrêts des tribunaux ou encore de nombreuses statistiques. Toutes ces informations des plus précieuses sont souvent extrêmement difficiles à retroucer. C'est pourquoi, étant donné la necessité continuelle de procurer ce matériel aux nombreuses usagers de la Bibliothèque de la Société des Nations, un premier essai a été fait en vue d'établir quelles données d'intérêt économique et financier (statistiques, rapports, etc.) étaient publiées périodiquement dans les journaux officiels de nombreux pays. Nous espérons que cet essai pourra également faciliter les recherches â d'autres bibliothèques et bureaux gouvernementaux et même suggerer une analyse plus détaillée et plus complète que ne le prétend faire la présente tentative.*

Dr. Sevensma had the contents given for about 60 official gazettes—national, state, and colonial—in illustration of his points.

At the time, my attention had been called to the work in progress at the Library of the League of Nations (Geneva) and also to some similar work in progress at the French Ministry of Finance (Paris), as well as to the paper by Dr. T. P. Sevensma. In 1938, I followed the suggestion of Dr. Sevensma and presented the results of a systematic analysis in the alphabetical order of the jurisdictions of about 250 official gazettes to the Committee on Public Documents of the American Library Association at the 1938 annual conference (*4*).

As one of the unfortunate results of the Second World War, then in progress, I prepared a statement entitled "Exiled Governments: Their Official Records,"

* Editor's translation (J.E.D.): Among government publications, official gazettes from various countries have a special importance, beyond the fact that they constitute the most widely distributed kind of government publication. For historical or other reasons, these official gazettes have become collections of many different kinds of information, varying greatly from country to country. Naturally the laws, decrees, and other official information of the government are found in them, the verbatim parliamentary proceedings of some countries, and in others, the decisions of courts or even numerous statistical tables. All this valuable information is often very difficult to retrieve. For this reason, given the necessity of continually obtaining such material for the many users of the Library of the League of Nations, a first effort has been made to provide access to the material of financial and economic interest (statistics, reports, etc.) published from time to time in the official gazettes of many countries. We hope that this effort will facilitate the research of other libraries and governmental offices and, equally, will suggest a more detailed and thorough analysis than we can try to give in the present experiment.

that appeared in the *American Political Science Review* in 1941 (*5*). Completeness of record under such circumstances has often been difficult to maintain, or even to determine, as has been true under other unusual circumstances, revolution, etc.

In 1958, the United Nations Library (Geneva) prepared as No. 1 of its *Listes bibliographiques* (nouvelle série) [Miscellaneous Bibliographies (new series)], a 38-page mimeographed *Répertoire des données publiées dans les journaux officiels* [Analysis of Material Published Regularly in Official Gazettes]. This analyzed the important nonlegal material appearing regularly in the 199 official gazettes then being received at the United Nations Library in Geneva and reflected the increasing interest presented in *Miscellaneous Bibliography*, No. 4 (24 pp., 1935) of the League of Nations Library, Geneva, which had also made no effort to include material relating to treaties, law, and legislation. Not all treaties, law, and legislation are published regularly in official gazettes, there being at times separate publications, or even law gazettes.

Even more important in 1958 was the publication of UNESCO's *A Study of Current Bibliographies of National Official Publications*, edited by Jean Meyriat (*6*), who through his professional service with the International Committee for Social Sciences Documentation was especially competent to center on attention to official gazettes of national governments, saying (p. 39) that they "must obviously be classified first among official publications."

Further, Meyriat continues:

> The official gazette of the State is the official publication *par excellence*. In fact, the immense majority of States publish one. In a few States whose governmental and administrative structure is markedly undeveloped, a semi-official journal, at least, is to be found. In every case the publication performs a basic function: to make public those texts and instruments with which the citizens must be acquainted.
>
> *(a) Content of the official gazette*. Containing everything that the citizens should know, the official gazette as a matter of course publishes announcements and notifications by the State, the proclamations of its Head, etc. More exactly, the standard content of this official gazette corresponds to the various kinds of publication defined above. . . . For the most part, different categories of texts . . . are published either outside the official gazette under a separate title, or else simultaneously or successively in the official gazette and in a separate publication. . . .
>
> *(b) Tables of contents and indexes of the official gazette*. The bibliographical problems of the official gazette tend to be the same as those created by its tables of contents and indexes, which are the more necessary according as the content of the official gazette is more varied. They are quite indispensable when this gazette includes administrative reports, statistics and so on.
>
> These indexes and tables of contents, if properly prepared, are real bibliographical instruments. It is therefore useful to know, for each country, whether they are published in several parts, what system of classification is used, at what intervals they appear, whether they may be procured separately.
>
> In this connexion, it would be well to recommend first of all that detailed tables of contents and indexes of the official gazette should be published in all cases, that a satisfactory system of classification should be applied to them, and finally that they should be widely disseminated in libraries as bibliographical instruments.

After the above general statement, Meyriat takes up briefly certain related categories of publications which present special problems when independent from the official gazette, as follows: (*a*) Legislative texts; (*b*) Judicial decisions and rulings; (*c*) International treaties and engagements; (*d*) Minutes and records of meetings of assemblies. All in all, Meyriat has dealt with about 100 national jurisdictions and not quite that number of official gazettes.

In 1964, the Dag Hammarskjold Library of the United Nations (New York) put forth the 50-page *Government Gazettes: An Annotated List of Gazettes Held in the Dag Hammarskjold Library, New York*, containing about 200 titles (*7*). For information other than laws, ordinances, rules and regulations, treaties, and related matters, reference is made to the *Miscellaneous Bibliographies* (new series), No. 1, 1958, of the United Nations Library, Geneva, in which " . . . for those countries where the gazettes are in the nature of official newspapers, and do not contain any legislative texts (*e.g.*, Austria, Denmark, Norway and Sweden) or where the gazette does not exist at all (*e.g.*, Liechtenstein), other official publications which regularly contain texts of legislative materials are included in the list and are distinguished by an asterisk prefixed to their titles."

From the point of view of having available the official gazettes of a considerable number of jurisdictions in current as well as retrospective files, there are the problems of the rapidly increasing amount of shelf space needed and the difficulty in acquiring complete files, as well as the further problem that a certain number have been printed and are now being printed on paper of not too high a quality. Thus, the problem of availability and service would seem to have, from one point of view, much in common with that of newspapers, which is being solved to a very considerable extent so far as retrospective files are concerned by the use of microfilm.

A recent mention of microfilming work at and in conjunction with the New York Public Library prior to 1971 would seem to indicate that there were in existence about 250 national government gazettes and about 100 local government gazettes (*8*). Not only is there the problem of official gazettes beginning in the 17th century, such as in Great Britain and Spain, but there are new ones occasionally appearing on the scene, such as the *Cayman Gazette* in the Caymen Islands (West Indies), beginning in 1975.

An active center for the microfilming of foreign newspapers has come into existence at the Library of Congress, Washington, D.C. To the functions of the Coordinator of Foreign Newspaper Microfilming have been added those of official gazette microfilming, the results of the work being made available several times a year as *Foreign Newspaper and Gazette Report.*

In Spain, under an Order of February 4, 1971, the offices of the Boletín Oficial del Estado (Trafalgar 29, Madrid 10) make available current microfilm of *Boletín oficial del Estado: Gaceta de Madrid,* particularly for the Spanish courts, administrative offices, libraries, universities, centers of research and documentation, and legal professional organizations. Retrospective files are available beginning with 1807, as well as those for the *Novísima recopilación de las leyes de España,* authorized in 1805, 1806, and 1808 (*9*).

REFERENCES

1. *A New English Dictionary on Historical Principles,* Oxford, 1900, Vol. 4, G87.
2. Winifred Gregory, *List of the Serial Publications of Foreign Governments, 1815–1931,* H. W. Wilson Co., New York, 1932, 720 pp.
3. World Congress of Universal Documentation, Paris, 1937, *Texte des communications. Berichte. Communications,* Paris, [1937], 344 pp.; Sevensma: pp. 313–320.
4. American Library Association, Committee on Public Documents, *Public Documents . . . Papers Presented at the 1938 Conference,* Chicago, 1938, 429 pp.; Childs: pp. 129–174.
5. James B. Childs, "Exiled Governments: Their Official Records," *Amer. Political Science Rev.,* **35**(6), 1158–1160 (December 1941).
6. *Etude des bibliographies courantes des publications officielles nationales, Guide sommaire et inventaire,* Preparé par le Comité international pour la documentation des sciences sociales, Jean Meyriat, Redacteur [A Study of Current Bibliographies of National Official Publications, Short Guide and Inventory, Compiled by the International Committee for Social Sciences Documentation, Jean Meyriat Editor], UNESCO, Paris, [1958], 160 pp.
7. *Government Gazettes: An Annotated List of Gazettes Held in the Dag Hammarskjold Library, New York,* United Nations Publ. No. 64.I.24, 1964.
8. *Government Publications Review,* **2,** 298 (1975).
9. *Boletín oficial del Estado: Gaceta de Madrid,* **315**(264), (November 4, 1975).

JAMES BENNETT CHILDS

OFFICINA BODONI

Arguably the most important private press of the period since World War I, the Officina Bodoni was established in 1922 by Giovanni Mardersteig (born 1892). Previously employed by the publisher Kurt Wolff, Mardersteig at first planned to set up his press in Rome, but in fact the first home of his press was at Montagnola, in the Ticino (Switzerland).

The roots of his enterprise were twofold. On the one hand, as a follower in the arts and crafts tradition of William Morris (q.v.) and T. J. Cobden-Sanderson (q.v.), he was devoted to the handpress, believing it to be the only instrument which permitted the strictest attention to detail and at the same time gave the greatest subtlety of impression. On the other hand, there was none of the quasi-medieval romanticism which imbued Morris's work at the Kelmscott Press (q.v.), nor the same obsessive search for a single form of "the ideal book" which typified Cobden-Sanderson's output from the Doves Press (q.v.).

The distance between Morris and Mardersteig is amply shown, in fact, by the press's name: It was named for the great 18th-century Parma printer Giambattista Bodoni, and in its first period the Officina Bodoni printed only in Bodoni's types cast from the original matrices in the Museo Bodoniano, Parma, which were obtained through the offices of the Italian government. A more pointed contrast with Morris's 15th-century models could scarcely be found. The difference between Cobden-Sanderson and Mardersteig is shown by the latter's choice of a very wide range of types, paper, format, and illustration for the work he was to produce, with the design of each book and the choice of its illustration planned around its particular text.

In another respect also the Officina Bodoni was to show a markedly different philosophy from the majority of private presses. In many cases these are the spiritual descendents of the Florentine scribe Vespasiano da Bisticci, whose magnificant manuscripts grace the shelves of any collector fortunate enough to possess one, as surely as they would disgrace any scholar who relied on the authority of their texts. Mardersteig's belief has always been that textual precision is the most important task facing the printer, and the pains that he has taken to ensure an accurate text recalls not Vespasiano but such scholar-printers as Aldus Manutius or Robert Estienne.

Having set up his press at Montagnola, Mardersteig printed a few small trial books (in very small editions, *Goethes Urworte: Orphisch* dated December 1922 being the first) before publicly issuing Poliziano's *Orphei tragedia* as the first Officina Bodoni book in February 1923.

The Poliziano was quickly followed by other classics of European literature, such as Michelagniolo Buonarroti's *Poesie*, Shelley's *Epipsychidion*, Goethe's *Das römische Carneval*, and de Musset's *Les nuits*. All were printed in Bodoni types, and superbly executed, so that Mardersteig's work rapidly acquired favorable notice from typographers throughout Europe. A change in the tempo of that work came from a visit by the English typographer Stanley Morison at the end of 1924 and from his introduction of the American Frederic Warde to Mardersteig. With both Mardersteig struck up a close association, in Morison's case to end only with the latter's death in 1967. With Warde it was briefer (ending with Warde's return to the United States in 1927), but for a time he and Mardersteig were planning an Accademia Tipografica to be set up in Florence, and had gone so far as proofing a prospectus for it.

When the Officina Bodoni moved in 1927, however, it was not to Florence but to Verona, where the press has remained ever since. The reason for the move was simple: Mardersteig had won a limited competition for the execution of the Italian national edition of the works of Gabriel d'Annunzio, and this had to be printed on Italian soil.

This mammoth undertaking—49 large quarto volumes, many of over 500 pages, set by hand in Bodoni types—was printed in an edition of 300 copies on the handpress. There was also a "trade edition" (really a misnomer for such handsome work on handmade paper) of 2,500 copies produced in a special department of the Mondadori printing house, where Mardersteig applied to the powered press the lessons learned at the handpress. D'Annunzio's works were to occupy most of the Officina Bodoni's resources until 1936.

They did not, however, monopolize Mardersteig's time. Even before his move from Montagnola, through his association with Morison (the typographical adviser to the Monotype Corporation) he started experimenting with some of the classic typefaces being revived by Monotype. At the same time, not altogether satisfied with Monotype Bembo, he started work on his own version of this roman face cut for Aldus Manutius by Francesco Griffo in 1495. Mardersteig's version, his Griffo type, was not to be completed until 1939, but meanwhile he had designed and had cut another typeface, Zeno in 1934–1936 and during the same period designed a text type, Fontana, for the exclusive use of the Collins printing house in Glasgow (since made generally available by Monotype). A third typeface for the Officina Bodoni, Dante, was completed in 1955; it has since been issued commercially by Monotype and has proved highly successful.

During this period, while the Officina Bodoni was occupied by its work on d'Annunzio, Mardersteig enlarged its capacity by installing handpresses for printing copperplates and lithographs, so that when it was able to resume its normal pattern of work after 1936 the press was equipped to deal with many different illustration processes.

Its normal pattern, even while the press was still at Montagnola, was markedly different from that of most private presses. A substantial proportion of its output was for other publishers (11 of the first 21 books) so that technically the Officina Bodoni is not a private press, but a commercial undertaking—a highly successful undertaking, too, though it could scarcely be less appropriate than to regard Mardersteig's work as commercial in the normal sense of the word.

With the resumption of other work in 1936, the same pattern continued: some books commissioned by other publishers such as Hoepli (Milan), Joh. Asmus (Leipzig), Faber (London), and Parthenon Books (New York), among others. Some are private editions, done for bibliophile groups like "I Centi Amici del Libro" of Florence, or for individual patrons. In some instances, these private editions consist of a single copy only.

A good many books appeared under the press's own imprint. These have included many classics with illustrations by such modern masters as Frans Masereel. Even more attractive, in many respects, has been the series of books illustrated with recut blocks after 15th-century woodcuts. The first of these was Fritz Kredel's reinterpretation and recutting of Bartolomeo di Giovanni's cuts for *Il ninfale fiesolano* in 1939, and many others have subsequently been recut by Bruno Bramanti, Anna Bramanti, and Leonardo Farina. Probably the most important of these has been the edition of Terence's *Andria* (1971), with Kredel's cutting of Albrecht Dürer's originals, which had survived uncut as drawings on the woodblocks since 1492. As the first publication of these illustrations by Dürer this is an exceptionally interesting work.

In the Second World War the Officina Bodoni was able to continue work, though Mardersteig's exacting standards compelled him to destroy a large proportion of the work printed, because of imperfections in the materials available under war conditions. After that time, however, a full program of work was resumed with the several series of books already mentioned above, and also with a series of particular importance in the history of calligraphy and typography. The first of these had appeared in 1924. *The Calligraphic Models of Ludovico degli Arrighi* (production of which was inspired by Frederic Warde) and several other studies—on Damianus Moyllus, Andres Brun, Eustachio Celebrino, and others—appeared in the press's early years. Others—like Felice Feliciano's *Alphabetum Romanum* (1960); the magnificent facsimile of Giambattista Bodoni's 1788 *Manuale tipographico* (1968); or Mardersteig's own scholarly research (sometimes published elsewhere), like his study of Griffo's types for Aldus Manutius, published in the *Festschrift* for Tammaro de Marinis (1964) or the 1967 monograph on the production of Petrus Maufer's *Avicenna in Padua* in 1477 (1967)—have graced typographic scholarship in a way that only a scholar-printer with a lifetime of experience could do.

The Officina Bodoni and his own scholarly researches have not been Mardersteig's only contribution to the cause of good printing. Following from the experience with Mondadori in the "trade" edition of d'Annunzio, in 1948, he established the Stamperia Valdonega, a distinguished trade printing house whose work is shown to advantage in the series of Italian classics published under the imprint of Riccardo Riccardi. Now under the direction of his son, Martino Mardersteig, the Stamperia Valdonega stands out as one of the best trade printers anywhere in the world today.

Very much a typographer's typographer, Mardersteig's work has been widely exhibited in discerning museums and libraries outside Italy—at the Plantin-Monetus Museum, Antwerp, and at the British Museum in 1954; 10 years later in Brussels and in The Hague; in New York, and so forth. The catalogs of these exhibitions (printed at the Stamperia Valdonega), though but *antipasta* to the pleasure of the Officina Bodoni's own work, are deservedly themselves collectors' pieces. One cannot better summarize Mardersteig's importance in book production than by quoting from Stanley Morison's introduction to the British Museum's catalog:

> It is the merit of the numerous productions laid before the visitor to this special exhibition, that they are all produced on the hand press. Their printer has for thirty years [now 50] acted on the belief that to confer fine typographical form upon a fine piece of literature is a justifiable use of time and labour, material and skill; secondly that no quality of impression, however fine, can excuse inattention to textual precision. Upwards of a hundred works of literature, scrupulously chosen (in many instances critically edited by himself) and expressed in the original Latin and European vernaculars, attest their printer's title to enduring fame. He has, indeed, a position that cannot be far from singular, and is possibly unique.

BIBLIOGRAPHY

[Barker, Nicolas], "Giovanni Mardersteig and the Officina Bodoni," *Book Collector*, **21**(2), 191–202 (Summer 1972).

Cave, Roderick, *The Private Press*, Faber, London, 1971.

Dreyfus, John, *Giovanni Mardersteig*, Gallery 303, New York, 1966.

Ewald, Friedrich, "The Officina Bodoni," *Fleuron*, 7, 121–131 (1930).

Mardersteig, Giovanni, *Ein Leben den Buchern gewidmet*, Gutenberg-Gesellschaft, Mainz, 1968.

Mardersteig, Giovanni, *The Officina Bodoni: the Operation of a Hand-press During the First Six Years of Its Life*, Editiones Officinae Bodoni, Verona, 1929.

Officina Bodoni Verona 1923–1954, British Museum, London, 1954.

Officina Bodoni Verona 1923–1964, Bibliothèque Royale, Brussels, 1965.

Ryder, John, "The Officina Bodoni," *Private Lib.* (n.s.), **5**(4), 175–259 (Winter 1972).

Schmoller, Hans, "A Gentleman of Verona," *Penrose Ann.*, **52**, 29–34 (1958).

RODERICK CAVE

OHIO COLLEGE LIBRARY CENTER

The origins of the Ohio College Library Center (OCLC) lie in the cooperative activity among Ohio academic institutions fostered by the Ohio College Association, founded in 1867. From 1951 to 1967, committees of librarians and academic executive officers explored means of library cooperation that would increase the availability of library resources at each Ohio academic institution and at the same time reduce library costs. In 1967 the Ohio College Association brought the Ohio College Library Center into being, chartered by the State of Ohio as an educational, nonprofit corporation.

During its first months of existence, the OCLC determined that its principal substantive objective would be making the resources of participating libraries available to individual users at individual libraries, and its chief economic goal to be deceleration of the rate of rise of per-unit library costs. To achieve these objectives, the center determined that it would have to develop an on-line computerized library network having a half dozen major subsystems: (*a*) an on-line union catalog and shared cataloging subsystem, (*b*) serials control subsystem, (*c*) technical processing system, (*d*) on-line interlibrary loan request system, (*e*) retrieval by subject, and (*f*) remote catalog access by readers and circulation control. The center also has other objectives such as (*a*) to furnish readers and libraries with information when and where they need it, (*b*) to enable libraries to give personalized services, (*c*) to provide management information, and (*d*) to create and make available new and improved library operational procedures.

Development of the on-line network began in 1969, and the first institutions began operation on the network late in August 1971. A year earlier, however, the center had initiated an off-line catalog card production system employing MARC II tapes from the Library of Congress. In late 1972 membership was opened to nonacademic libraries, and in March 1973 the membership of the center voted to extend OCLC services outside of Ohio. Following that decision, there was a rapid expansion of the network, so that late in 1975 there were more than 500 institutions operating on the system, employing over 900 terminals.

The OCLC succeeds in making resources more widely available with its on-line union catalog and reduces the rate of rise of per-unit costs in libraries by effecting economies of scale and by providing libraries with labor-saving computerized systems. Economy of scale is achieved by elimination of duplicate cataloging activity among participating institutions.

At the end of 1975 the OCLC on-line catalog contained nearly 2 million cataloging records, to which were attached more than 8 million location listings. The daily growth of the catalog was some 4,000 new catalog records and approximately 25,000 new location listings.

Subsequent to the implementation of the on-line union catalog and shared cataloging in August 1971, the center continued to develop and enhance the system. By the end of 1975, the on-line serials control system was also operational, having the capability for inputing serials cataloging records and associated holding records from terminals as well as the checking-in of individual issues. At that time the center had under development an on-line acquisitions system, an on-line interlibrary loan request system, an authority file, and a subject retrieval system.

A few participating libraries have made terminals available to their readers in public service areas, where it has been observed that they use the on-line catalog more accurately and swiftly than is possible with a card catalog. Some participating institutions have decided to discontinue their card catalogs and rely entirely on an on-line catalog, and one union catalog center has already done so.

The OCLC has developed new catalog concepts and has applied economic concepts to librarianship. The center's on-line catalog is a late 20th-century catalog consisting in October 1975 of some 1,400,000 small catalogs, in contradistinction to the 17th-century printed bookform catalog and the 19th-century card catalog having entries in one linear arrangement. In the OCLC system, the size of the small catalogs varies from 1 to 32 entries. The maximum size could vary according to system design, but up until 1976 the OCLC on-line catalog employed a maximum of 32 entries for each miniature catalog. The maximum of 32 entries for a catalog suggests that descriptive cataloging may be greatly simplified for libraries having catalogs entirely on-line by mechanically transcribing, with minimal human intervention and indexing, the text on the title page or at the head of a periodical article.

The Ohio College Library Center is an early example of an on-line computerized library network that has made it possible for libraries to define and attain new objectives not possible of attainment in classical librarianship, as well as to develop new concepts. Much remains to be done before the new librarianship will attain a high level of sophistication.

FREDERICK G. KILGOUR

OHIO HISTORICAL SOCIETY

The Ohio State Archaeological and Historical Society was founded in 1885. The stated purpose of "promoting a knowledge of archaeology and history, especially of Ohio" was doubtless suggested by the spectacular remains of pre-Columbian culture in Ohio such as Serpent Mound in Adams County, the Great Circle and Octagon Earthworks in Licking County, or Fort Ancient in Warren County. The last-named was turned over to the custody of the society as early as 1891, and today the society cares for it and 14 other prehistoric sites.

Although the name was officially changed to Ohio Historical Society in 1954, archaeological and museum functions continue to be a major aspect of its activity. Indeed, there is also a Natural History Department incorporating Ohio State University's collections in this field and supported partially by the university. In spite of its broad interests and responsibilities, the society's point of departure for all its activities is the history of the state in the broadest sense. Its archaeological work, the maintenance of nearly 60 historic sites, an extensive educational and public program, publications, and archival and library services are all aimed primarily at Ohio history.

The book and periodical collection amounts to some 100,000 bound volumes and contains what is probably the best collection of Ohioana in existence. Actually it goes far beyond the 175 years of Ohio's official presence as a state of the Union. There is a heavy emphasis on the early Northwest Territory, including the whole region north of the Ohio River and early travels in the Ohio Valley and Middle West in general. The collections in archaeology and natural history have, of course, a special relevance for Ohio, but they are also important for the Ohio Valley in general. There are some 22,000 rolls of microfilm, particularly of Ohio newspapers, of which the society has the largest collection in existence. There are large picture files with about 15,000 photographs of historical interest. Over 3,000 maps, including the earliest ones of Ohio, are in the collections.

The society has always collected personal papers of Ohioans in all walks of life. Over a thousand collections numbering more than a million pieces were in the library in 1959 when the society was designated as the archival agency of the entire state. Since then the society has worked actively with officials of state departments and minor civil jurisdictions to develop effective means for the preservation and accessibility of public records. In many of the historic sites under the supervision of the society—for example, the home of the noted Negro poet Paul Laurence Dunbar in Dayton or Governor Thomas Worthington's home, "Adena," in Ross County near Chillicothe—there are occasional original manuscripts or photocopies.

Most important of the historic sites supervised by the society is the Rutherford B. Hayes Home and Library at Fremont in Sandusky County. It is administered by the society with the cooperation of a family foundation. It contains some 85,000 books, including Hayes's personal library (with the Robert Clarke collection of Americana bought by President Hayes in 1874). The Civil War, Reconstruction, the Negro, and the spread of the railway system in the United States are well represented in the collection. There are also Hayes's diaries and correspondence, the Hayes family papers, Fremont and Sandusky County local history (including much about northern Ohio in general), and manuscript papers and letters of many public figures and writers, including William Dean Howells, Thomas Nast, David Ross Locke, Brand Whitlock, Albion W. Tourgee, Benson J. Lossing, and other important personalities of the latter half of the past century. Five volumes of the *Diary and Letters* of Rutherford B. Hayes were published from 1922 to 1926. It is of some significance to note that the tradition of special presidential libraries and archives did not start with Franklin D. Roosevelt.

The society has always used its collections effectively in its publication program, which goes back to the first volume of the *Ohio Archaeological and Historical Quarterly* (called *Publications* instead of *Quarterly* in some volumes) in 1887. In 1955 the name of the journal was changed to *Ohio History*, and illustrations were included along with useful bibliographical features such as lists of theses and dissertations on Ohio history. The journal has always maintained a high standard of quality from the standpoint of historical scholarship, and the changes in name and format have been external matters only. Among other publications are Richard G. Moran and James H. Rodabaugh, *Bibliography of Ohio Archaeology* (1947) and Elizabeth C. Biggert, *Guide to the Manuscript Collections of the Ohio State Archaeological and Historical Society* (1953), both designed to make the collections more widely known to scholars.

Ohio is rich in county historical societies on a solid footing, as well as the Cincinnati Historical Society (formerly Historical and Philosophical Society of Ohio) and the Western Reserve Historical Society in Cleveland, both of the latter having regional and national importance. The Ohio Historical Society has done an effective job of coordinating the work of the local societies, in part due to the widespread network of historical sites it administers, in part due to somewhat more generous appropriations than most state-supported historical societies have received in the past.

BIBLIOGRAPHY

Ohio State Archaeological and Historical Society, Library, *Guide to the Manuscript Collections in the Library of the Ohio State Archaeological and Historical Society*, by Elizabeth C. Biggert, Ohio State Archaeological and Historical Society, Columbus, 1953.

Whitehill, Walter Muir, *Independent Historical Societies, an Enquiry into Their Research and Publication Functions and Their Financial Future*, The Boston Athenaeum, Boston, distributed by Harvard Univ. Press, 1962, pp. 282–288.

LAWRENCE S. THOMPSON

OHIO LIBRARY ASSOCIATION

History

The earliest known planning for the Ohio Library Association (OLA) took place on a train. William H. Brett, Electra C. Doren, and Linda A. Eastman were returning from the Lake Placid Conference of the American Library Association (ALA) in the fall of 1894. After discussing the need for a state library organization, they agreed that Brett should take the initiative. At a meeting in Columbus, February 27–28, 1895, some 35 librarians adopted a constitution and elected Brett as president.

The first annual meeting was held in October 1895, in Cleveland. Brett's presidential address dealt with the history of libraries in the U.S. and ALA's contribution since 1876. He stressed that Ohio (0.41 books per capita) was lagging far behind states like Massachusetts (2.57) and was 18% below the national average. Only two collections (both in public libraries) had over 100,000 volumes and the State Historical Society of Wisconsin had a better collection on Ohio history than did any library in Ohio. Rutherford P. Hayes discussed interlibrary loans, cooperative cataloging, and taking the State Library out of politics. Charles Orr read a paper on "Printing and Distribution of Public Documents in Ohio."

Later conferences in the decade built on the momentum already established. In 1896, a joint meeting of librarians from Illinois, Michigan, and Ohio was held in Cleveland in conjunction with ALA. The 1897 conference in Cincinnati gave attention to reference books, running a small library, library training, libraries and schools, and the Ohio Library Commission. Beginning with the Dayton conference of 1898, M. E. Ahearn began a 10-year period of covering OLA activities in *Public Libraries*. Cooperation with the schools was a major topic, with attention also given to children's rooms and children's librarians by the 78 attendees. Library hours and salaries provoked heated discussion at the Toledo conference in 1899, and a resolution on the difference between professional and clerical work was adopted. Alice Boardman reported on the *Handbook of Organization* published by the State Library Commission, on efforts to collect Ohio Library statistics, and extension of traveling libraries. Membership in OLA totaled 287 by 1900.

The 1904 annual conference exemplified most of the concerns and activities in the first decade of the 20th century. Held in Findlay, Ohio, May 24–26, with Linda Eastman as president, the conference featured a legislative report by W. H. Brett, a major address by Melvil Dewey, and consideration of such topics as library service to schools, selection of periodicals for the small library, women's clubs and libraries, clubs for boys and girls, library training, the new Western Reserve Library School, selection of books, cataloging, and the needs of college libraries. An address on "The Place of the Library in the Educational System" was given by W. O. Thompson, president of The Ohio State University. A charming feature of the conference was the extensive use of musical selections by local groups. The balance in the treasury on October 6, 1903 was $25.74. Receipts during the year totaled $168.50 and expenditures $125.92, leaving a balance of $68.32 in May 1904. Membership stood at 397.

Further indication of the scope of activities and concerns is given by the roster of committees appointed by the Executive Board on December 31, 1908: county library, library extension, relation of libraries and schools, interrelation of libraries, publicity, necrology, special library editions, auditing, women's clubs, legislation, cataloging, and training. Other highlights of the decade included success of a bill to provide for a state library organizer and appointment of Mary E. Downey to that post in 1908, a joint conference with Indiana and Kentucky in Louisville in 1909, and the inauguration of district meetings in 1910. The 1910 annual conference in Columbus stressed the relationship of libraries to art museums, playgrounds, and municipal departments and included a paper on "The Library and the Working Man."

The next decade was characterized by expanding activity and membership, with some interruptions caused by the First World War. The 1911 joint conference with Michigan featured a significant address by Edward L. Tilton on "The Architecture of the Small Library." Linda Eastman gave a stereopticon lecture on "Library Equipment." At the OLA business meeting it was decided that the headquarters should be at the Office of the State Library Organizer and that OLA should affiliate with ALA, contributing 10¢ per member to the ALA treasury. At the 1912 conference, the College and University Section heard a report on the special collection of documents and special reference service developed by the Ohio State University Library for the 1912 Constitutional Convention. In 1913, great emphasis was placed on cooperation with the Ohio Federation of Women's Clubs. By 1915, OLA had 535 members. The 1916 conference spent time on the Carnegie libraries which were delinquent in their obligation to provide tax support for operating expenses. A union catalog of periodicals was undertaken and a committee on state institution libraries was approved. During the war years, OLA was active with the library at Camp Sherman, under the leadership of Burton E. Stevenson, who later helped ALA with army libraries abroad and the American Library in Paris. A report on libraries in the 21 state institutions at the 1917 conference revealed that the only trained librarian was employed in the Institution for the Feeble-Minded, Columbus. OLA recommended a state librarian for state institutions. The war had a negative impact on funding and activities. When the Executive Board met on February 22, 1918, "The treasurer reported a balance of $21.75 in the treasury with a bill of $47.50 for ALA dues." The 1918 annual conference did not have a printed program because of lack of funds, and attendance was only 94, compared with 220 the preceding year. Americanization received major attention. It was noted that 35 languages other than English were spoken at Camp Sherman. Talks were given on teaching English to foreigners and on "Americanization and Public Libraries." Plans for postwar recovery were made early in 1919 and included a quarterly bulletin as well as a special bulletin on legislation. The annual conference in Youngstown later that year was attended by 150 and membership had climbed back to 545. In 1920, life memberships were increased from $10.00 to $25.00, a special libraries section was approved by the Executive Board, and a gift of $500 from Mrs. David Tod, of Youngstown, made possible a series of awards to librarians in small libraries. Some 350 attended the 1920 annual conference in Cleveland, which featured addresses by Joseph L. Wheeler (library conditions in Ohio), Carl Milam (adult education), Jennie Flexner (circulation), Dorsey Hyde (library service to city departments and officials), and William J. Hamilton (county library legislation).

Much energy and attention in the 1920s was devoted to legislative matters which are covered elsewhere in this article. The 1921 conference featured talks on "The Special Library, Local Industry, and the Public Library" and "Books for the Foreign Born." The financial condition had improved, with total income at $1,305.18 and a working balance of $294.68. Membership was 574 in 1921 and 640 in 1922. A concern about library services to state institutions was reflected in committee reports for several years. Progress was slow because of lack of funds and staff. In 1923, it was reported that the state librarian had included funds for the salary of a state library supervisor in the 1923–1925 budget, but this item had been deleted. In the early 1920s, OLA endorsed ALA's positions urging a supervisor of school libraries for each state and recommending $1.00 per capita as a reasonable minimum for support of public libraries. The following sections were active during much of the decade: city and industrial, college and reference, library and school, trustees, children's library, small libraries, and county libraries. The needs of immigrants continued to receive attention at annual conferences and the Americanization committee made studies and recommendations concerning library services to the foreign born in Ohio. Censorship was the topic of several papers and discussions at the 1927 conference. In 1930, a joint conference with the Indiana Library Association and the Indiana Library Trustees Association was held in Dayton with 697 in attendance.

Despite, or perhaps because of, the severe effects of the depression on libraries, the decade of the 1930s was one of great OLA activity. The Ohio Library Trustees Association (OLTA, formerly a section of OLA) became an organization in its own right in 1931, with Charles R. Wilson of Stow as its first president. OLA began to publish a *News Bulletin* in 1932. Annual conferences and district meetings were held with regularity. As in the 1920s, much effort was expended on legislative activities. In 1933, the Citizens Library Committee of Ohio was organized as an independent affiliate, chaired for nearly a decade by Province M. Pogue of Cincinnati. The 1933 conference included talks by Harlan Hatcher on "Recent Tendencies in American Fiction," George Sokolsky on "Changing China," and Edward Davison on "The Approach to Poetry." Round tables and sections which sponsored program meetings included: branch libraries, catalog, local history, reference, school libraries, college and reference, children's, large libraries, small libraries, and special libraries. Conference registration totaled between 470 and 500, including 75 to 100 trustees attending the concurrent meetings of the Ohio

Library Trustees Association. The trustees continued to meet concurrently. At the 1934 conference, the Ohio chapters of the Special Libraries Association also met with OLA. The Ohio Planning Committee (with lay, trustee, and librarian representation) was organized in 1934, with Carl Vitz as chairman. The Junior Members Group was organized that year and immediately began to sponsor a variety of local activities, particularly in Cincinnati and Cleveland. The Fortieth Anniversary Conference was held in Cleveland, October 8–10, 1935. It was noted that OLA had grown from 33 charter members in 1895 to more than 1,500 in 1935. A special *Handbook*, including a history of OLA by Effie Power, was published to mark the occasion. Topics on the program included: state aid for libraries, future state planning, county work, certification, and work of the State Library. Conference registration was 975—a new record. In 1936, a tristate meeting (Indiana, Michigan, Ohio) was held in Toledo. The district meetings (six) that year were mainly held on the perimeters of Ohio to attract participants from neighboring states. A registration fee of 25¢ was introduced at the 1937 conference. The format of the conference established a pattern generally followed in the years since. The program began on Thursday afternoon and ended on Saturday afternoon. There was a trustees luncheon at noon on Friday and a banquet Friday evening. (The "Men's Smoker" on Friday at 5 P.M. later became the "Exhibitor's Reception.") Two sections were formally organized: hospital libraries and workers with young people. Alice S. Tyler was elected to honorary life membership in OLA. The following groups cooperated with OLA and OLTA in sponsoring the 1938 conference in Cincinnati: Citizens Library Committee of Ohio, Kentucky Library Association, West Virginia Library Association, Ohio Valley Regional Group of Catalogers, Ohio Association of Hospital Librarians, Special Libraries Association (Cincinnati Chapter), and the Library Binding Institute. Resolutions adopted asked for state support for adult education and for purchase of books in foreign languages. Linda Eastman was made an honorary life member. Concern with adult education featured prominently at the 1939 Columbus meeting, while certification dominated the 1940 deliberations in Youngstown.

The following decade witnessed some interruption of OLA activities during the Second World War but a rapid recovery in the postwar period. The role of the library in national defense dominated the 1941 conference. Other topics included: cost accounting in cataloging departments, telephone reference service, use of microfilm, and photostat and interlibrary loan facilities in an emergency period. Breakfast meetings for the alumni of eight library schools were featured in the program. Prime topics in 1942 were the war effort and certification, but time was taken to discuss "The Crisis in Cataloging" and "The Use of Radio in Library Work." Frances G. Nunmaker, of the State Library, was appointed executive secretary and membership chairman of OLA. The district meetings in 1943 were merged with ALA local institutes on the war and postwar issues and problems. The 1943 annual meeting was cancelled in response to a request from the Office of Defense Transportation. District meetings (seven) were held in 1944 but the annual conference was postponed until January 30–February 1, 1945, when the Ohio General

Assembly was in session. The focus was on postwar problems and OLA's legislative program. District meetings for 1945 were first cancelled because of travel restrictions and later rescheduled for October and November. Most stressed the library's role in helping returned veterans and in peacetime community life. The annual conference in the spring of 1946 featured discussion of the Ohio Library Survey Program. The Junior Members reorganized, having been inactive during the war years. Other sections and round tables with program meetings included: catalogers, county librarians, larger public libraries, branch librarians, college and university libraries, reference librarians, workers with young people, and smaller public libraries. No district meetings were held in 1948 and the annual conference returned to its traditional fall schedule, with foreign policy and great books as key topics. There was also a joint OLA/OLTA meeting on the National Plan for Library Service, with John Cory as speaker. The College and University Section discussed academic freedom in the university and censorship in the public library. OLA did not hold a separate conference in 1949 but merely a business meeting as part of the ALA midwest regional conference. The Public Library Inquiry was the prime topic. Recruitment, use of films, and planning for federal library demonstrations were also discussed. In 1950, the normal pattern of district meetings in the spring and annual conference in the fall was resumed. A new attendance record of 800 was set for the district meetings. Topics on the agenda of the annual conference included "Libraries in the U.S.—'Truth Campaign' Abroad," "The Impact of Television," and "Libraries and the Ohio Sesquicentennial of 1953."

OLA expanded some familiar activities and broke some new ground in the 1950s. Attendance at the district meetings climbed to 1,000 in 1952 and remained around that figure in later years. The 1951 annual conference took as its theme "Affirming the American Heritage in Ohio Libraries," with talks on such subjects as the Constitutional Convention and Ohio's sesquicentennial. Other topics included television and the achievement of children and the library's role in rehabilitation. There were three workshops: audiovisual, intellectual freedom, and library buildings. The 1952 annual conference in Toledo featured Elton Trueblood and was attended by 700. Membership that year stood at 1,438. Sesquicentennial materials were distributed at the 1953 district meetings, which centered around the theme "From Coonskin to Bookmobile." At the 1953 annual conference, Robert B. Downs addressed the College and University Section on "Faculty Status for College and University Librarians." A joint committee of the Ohio Library Association and the Ohio College Association reported on library cooperation in Ohio. A tristate conference in Cincinnati in 1955 included a talk on "Automation" by George Shepard of IBM. In 1956 a preconference workshop on supervision was held. Speakers at the 60th annual conference that year included Dan Lacey, Virgilia Peterson, and S. Janice Kee. "Recruitment" was the theme of the preconference workshop in 1957. The impact of the St. Lawrence Waterway and cooperation between school and public libraries were major themes. Catherine Drinker Bowen was the banquet speaker. In 1958, a joint conference at French Lick, Indiana, featured Norman Cousins, Virginia Mathews, and Bonnie Prudden. Emerson Greenaway and Lawrence Clark Powell debated "Elements of a Good Librarian." The use of paperbacks in college libraries was also discussed. The Staff Organizations Round Table was formed as a result of the French Lick conference. In the spring and summer of 1959, Ohio's first workshops for supportive staff were held. Sponsored by OLA and funded by the State Library, these four workshops were attended by 223 and received favorable evaluations. The 1959 annual conference featured a talk by Governor Michael V. DiSalle on "Governmental Problems Affecting Our Libraries and Communities." Other speakers included James Rhodes on "The Trial of Mary Todd Lincoln" and Harry Golden on "Only in America." A "Juniors Only" conference was held on May 21, 1960 with the theme "Youth Priorities 1960–1970."

The following decade was one of major growth and change. The nature and extent of this change was probably not foreseen by the delegates who assembled in Cincinnati in 1961 to hear Virginia Mathews and David H. Clift discuss "The Changing Image of the Library." Other conference highlights included a talk by Edward Weeks on "The Evolution of an American Writer" and the first meeting of the Technical Processes Round Table. "Sense and Censorship," by Peter Jennison, was a key feature of the 1962 conference in Dayton. The Ohio Library Foundation was established in January 1963 to solicit private support for library needs. The real "bombshell" leading to change, however, was the 1963 recommendation of the "Little Hoover Commission" to Governor James A. Rhodes that the State Library be abolished and its collections transferred to the Ohio State University Libraries. Aroused librarians and trustees not only succeeded in turning aside this threat, but also established a joint executive office and appointed A. Chapman Parsons as the first full-time executive director, effective August 1, 1964. OLA at last freed itself from confusing ties to the State Library. Such concerns naturally occupied much attention at the 1963 annual conference, but the seeds of further change were also sown in a panel sponsored by the College and University Round Table, at which ideas that led to the formation of the Ohio College Library Center (OCLC) in 1967 were discussed in preliminary, not-yet-acceptable form. The role of the State Library was a unifying theme in the district meetings of 1964. OLA president Jesse Shera pointed out the need for a detailed, objective study. "Climate for Change" was the theme of the January 1975 *OLA Bulletin*, the first issue under its new editor, Gerald Shields. This approach was also evident in the roster of committees, which included committees on development and publications for the first time. The July issue, under the heading "Campus Controversy," carried a series of articles on union catalogs and academic library cooperation, part of the debate which led to the establishment of OCLC. The annual conference of 1965 gave substantial attention to library services for the disadvantaged. In 1966 it was announced that the State Library Board would sponsor a survey of Ohio public libraries, to be directed by Ralph Blasingame. The Ohio School Survey Commission received considerable attention in 1966. The appointment of Joseph F. Shubert as state librarian, effective September 1, 1966, opened a new era in which OLA and the State Library worked as separate entities but cooperated closely on matters of mutual concern. The OLA district meetings in 1967 were planned to acquaint participants with the Blasingame survey and to develop support for legislation that would eventually be needed for implementation. The 1967 annual conference featured a general address by Blasingame and six specialized sessions led by different members of the survey team. A study of OLA and OLTA was done by Ellen Altman as part of the larger survey. OLA, OLTA, and the State Library cooperated to sponsor three workshops and numerous discussion meetings on the results of the survey during 1968. These culminated in the adoption of the Ohio Library Development Plan by OLA and OLTA at the annual conference in Cleveland and in legislation to implement the program, which was signed by Governor Rhodes on August 25, 1969. In 1968, OLA appointed a committee on school library certification which made recommendations to the state Department of Education. The 1969 conference in Cincinnati was jointly sponsored with the Indiana Library Association and attracted a record attendance of 1,589. Highlight of the Diamond Anniversary Conference in 1970 was the inauguration of the OLA Hall of Fame.

The decade of the 1970s was one of consolidation, reorganization, and some retrenchment. Keynote speaker at the 1971 annual conference was Harold Hovey, Ohio director of finance, who discussed tax reform and the intangibles tax. Reports on various federally funded projects were also featured. Drastic reorganization took place at the 1972 conference. Proliferation of the number of round tables (14 by 1969) and the ineffectiveness of some led to the appointment of an ad hoc committee which studied the matter for over a year and recommended reorganization into six divisions: children's services, general services (e.g., typists, clerks, maintenance), information services, library education, special services (e.g., institutions, extension), and technical services. It was rather anticipated that a social responsibilities division might be added by membership at the annual business meeting. Instead the entire plan was thrown out by the membership and a new plan generated during the conference itself was adopted, with seven divisions: Defining Community Needs; Materials Evaluation and Selection; Information Organization, Retrieval and Service; Techniques of Information Dissemination (e.g., public relations and outreach); Governance and Finance; Personnel Functions, Education and Staff Development; and Research and Planning. An eighth division (Services to Children and Young Teens) was added in 1973 and the Academic Library Association of Ohio, an independent affiliated organization, was formed. Conference highlights that year included Kenneth Beasley on "A New Look at Evaluating Services," Frederick G. Kilgour on "The Benefits of OCLC to All Types of Libraries," a report on the National Commission on Libraries and Information Science, and a talk by Robert Wedgeworth on ALA and its chapters. OLA and OLTA cooperated closely with the State Library in promoting the Governor's Conference on Libraries and Information Services on April 2, 1974. Preconferences on outreach and serials; talks by Gwendolyn Brooks, Art Buchwald, and

Gerald Shields; and sessions on economic tradeoffs, mechanized information services, rental collections, and the Library General Information Survey of the National Center for Education Statistics were features of the 1974 Cleveland meeting.

In 1975 OLA decided to forego its state meeting in order to participate in the Midwest Federation of Library Associations Conference in Detroit. The 1976 conference in Columbus featured retrospective admission of distinguished Ohio librarians to the OLA Hall of Fame, and the 1977 conference in Dayton was planned in close cooperation with the Ohio Association of School Librarians and the Educational Media Council of Ohio. Membership declined somewhat after the introduction of a new personal dues schedule of \$2.00 per \$1,000 of income in 1970 and then stabilized at around 2,300. Attendance at district meetings ranged from 1,000 to 1,200 and registration at annual conferences fluctuated between 800 and 1,200. The budget rose from \$7,775 in 1963 (the last year before establishment of the Executive Office) to around \$75,000 per year in the mid-1970s, including about \$35,000 to the OLA/OLTA Joint Governing Board for operation of the Executive Office. The OLTA contributed a somewhat larger amount and the total budget for the Executive Office was approximately \$80,000 per year.

Legislative Activities

From the beginning, OLA was extremely active in promoting library legislation and attempting to secure funding for libraries. The State Library was in an unsatisfactory condition in 1895 and OLA lobbied successfully for a law (passed in 1896) which provided for a state library commission of three. C. B. Galbreath was appointed state librarian. The first county libraries in Ohio were established in 1898 when individual bills were passed for Hamilton and Van Wert Counties. In 1901, W. H. Brett drafted a general county library law which failed to pass. Before 1901, many municipal, township, and school district libraries were organized under special legislation. When this was declared unconstitutional by the Supreme Court of Ohio, OLA supported codes for municipal and school district libraries which passed the General Assembly in 1902. A bill to provide for a state library organizer was passed in 1906. By 1909, the State Library had again become victim of political influence. This situation continued for more than a decade, despite persistent efforts of OLA, and was not finally remedied until passage of a new law in 1921 and the appointment of H. S. Hirshberg as state librarian. Other efforts of OLA during these years which were too far in advance of their time to be passed included: a state board of library examiners (1908), further county library legislation (1908), and pensions for library staffs (1909).

In 1921 the logjam finally broke and OLA was successful with new county library legislation and the Bender Act which exempted school district public libraries from the Smith One Per Cent Law. By 1929, school district public libraries had reached a good position in terms of income and freedom from political control. Meanwhile, legislative successes in 1923 included: improvements in the laws for both school district and county district public libraries, increased funding for the State Library, and provision for the State Library in a proposed new state office building. By 1925 there was clear danger that Hirshberg might be replaced by a former state librarian with political connections but lacking professional qualifications. The State Library budget was vetoed and Hirshberg resigned in 1927. OLA protested vigorously. Some funds were restored to the State Library but it was not until 1934, with the appointment of Paul A. T. Noon, that professional leadership was again available. Noon's appointment was the culmination of several years of intensive public and private lobbying by OLA. A constitutional amendment in 1929 deprived public libraries of their favorable position and necessitated some source of funds other than the property tax by 1932. The result was the intangibles tax (on income from stocks, bonds, and other productive investments), which was introduced by Robert A. Taft and passed by the General Assembly in 1931, with some amendments in 1933. The law was attacked in the courts in 1932, 1933, and 1934. In each case, an Ohio Supreme Court decision was necessary. OLA gathered information on the effects of the tax and assisted libraries in their struggle to regain adequate funding. A joint OLA/OLTA committee met with Taft in 1932 to propose amendments which subsequently improved the libraries' position. During these struggles, OLA maintained contact with such groups as the Ohio Federation of Women's Clubs, Ohio League of Women Voters, Business and Professional Women's Clubs, Ohio PTA, AAUW, Grange, Farm Bureau, and Rotary.

The next few years were relatively tranquil by comparison, but solid gains were made. A state aid program was launched by the State Library. As a result of OLA efforts, public library employees became eligible to participate in the Public Employees Retirement System in 1938. Efforts to legislate certification for librarians were not successful. New legislation on county district libraries was passed by the General Assembly in 1947. Efforts to secure increased state aid for public libraries persisted over the years, with varying degrees of success. In 1953, OLA filed an amicus curiae brief in support of the Dayton Public Library, which had appealed an adverse ruling by the county budget commission to the Ohio Board of Tax Appeals and then to the Supreme Court of Ohio. The Supreme Court decided that a 1951 amendment to the law meant that the county budget commission must decide on the basis of "the needs of libraries" and not the needs of libraries in relation to other units. This decision established the priority of public libraries in claiming revenue from the intangibles tax. The library victory led the Ohio Municipal League to introduce a bill in 1955 which would have given municipalities a larger share of revenue from the intangibles tax. OLA and OLTA successfully fought this bill and later efforts by the Ohio Municipal League. Federal library matters also received attention. In 1955, OLA urged librarians and trustees to write to Senators Bricker and Bender in support of Senator Lister Hill's Library Services Bill. Passage of the Library Services Act in 1956 was noted with satisfaction and anticipation by OLA, which had already made recommendations to the State Library as to how federal funds should be spent.

The 1960s and early 1970s brought both victories and defeats. A bill on county district libraries, sponsored by OLA, was passed in 1961. In this, and in later legislative endeavors, valuable assistance was rendered by Norton Webster, OLA legal counsel. In 1962, OLA sponsored a questionnaire dealing with LSA-funded projects in Ohio. The strong and successful response of OLA and OLTA to the recommendations of the "Little Hoover Commission" in 1963 has already been noted. Much of 1965 was occupied with discussion of the impact of greatly increased federal aid from the Library Services and Construction Act of 1964. The reapportionment of the Ohio General Assembly in 1966 was watched closely and the deliberations of the Ohio Tax Study Commission received considerable attention in 1966 and 1967, especially that portion of the final report which recommended that public library priority on revenue from the intangibles tax should be reviewed. In 1969, the amendments to the Ohio Revised Code necessary to implement the Ohio Library Development Plan (OLDP) were introduced as S.B. 262, which passed the General Assembly and received the signature of Governor Rhodes on August 25. Despite the opposition of OLA and other groups concerned with civil liberties, H.B. 84 (dealing with obscenity) passed both houses by wide margins and went into effect in 1970. Efforts were made in 1971 to secure funding for the Ohio Library Development Plan. Governor John J. Gilligan favored abolition of the intangibles tax and a graduated state income tax of 4–8%. His budget included state aid for area library service organizations and other features of OLDP. Debate over the proposed income tax was intense and bitter, lasting until December 1971. The rate finally approved (½–3½%) was too small to fund all projects and OLDP was a victim of this decreased funding. In 1973 the state aid program was revamped to release some money to partially fund Ohio's first Area Library Service Organization (ALSO)—the Ohio Valley Area Libraries. The 1973 session witnessed another attack on the intangibles tax and successful resistance led by OLA and OLTA. In 1975, budget requests by the State Library (supported by OLA) were deleted by the governor and were not included in the budget passed by the General Assembly. In the meantime, some of the objectives set forth by OLA/OLTA in OLDP were being accomplished with federal funds. Beginning in 1970, LSCA money was used to assist multicounty library cooperatives (MCC). By 1975, there were nine MCCs. These, plus the one ALSO, included 171 libraries in 73 of Ohio's counties.

Professional Concerns

Although many professional concerns have already been covered in the history section, a summary of others is needed to complete the picture. In 1904, the Ohio Library Association developed a plan for printed catalog cards for small libraries after correspondence with 180 libraries and library commissions and the Library of Congress. Certification of librarians was a topic of persistent concern at annual conferences from 1934 through 1942. Efforts to pass legislation failed. A regional list of periodicals was published in 1936.

Concerns in 1940 centered on the needs of military establishments, training centers, and industry but without overlooking the problems of democracy, including the "Library Bill of Rights." These concerns were amplified in 1942 when Rose Vormelker was given leave of absence from the Cleveland Public Library to head the Publications and Exhibits Section of the USIS. OLA supported the Victory Book Campaign and participated in ALA's national and regional institutes on postwar problems. Educational films received attention in 1944 and later years. In 1945, OLA supported ALA's Library Development Fund.

The shortage of librarians after the war led OLA to stress recruitment at numerous meetings in the 1950s and 1960s. OLA also established a scholarship for attendance at library school and urged individual libraries to do the same. In 1950, one scholarship of $200 and two loans of $200 each were made available. In 1953 and 1962, OLA issued lists of scholarships available. By the early 1960s its own scholarship had been increased in size to $1,000. These activities diminished when the shortage of librarians ended in the early 1970s. Adult education was a strong focus of professional activity for many years. In 1950 the Adult Education Committee sent out questionnaires to Ohio public libraries on activities of the past 10 years and the results were published in the *OLA Bulletin*. Closely related to these endeavors were library programs to meet the needs of European refugees in the late 1940s. In 1957, OLA appointed a special committee to work with the Governor's Commission on Education Beyond the High School.

Intellectual freedom and censorship were continuing sources of attention over several decades. In 1951 the OLA Intellectual Freedom Committee gave its endorsement to ALA's 1950 resolution on loyalty oaths. In 1952, the ban on *Consumer Reports* in Dayton high school libraries was lifted after OLA protest, but the ban in the Cincinnati public schools continued. A panel discussed "Problems of Censorship" at the 1954 annual conference, and intellectual freedom conferences were held in 1955 and 1956. "What to Do Until the Censor Comes," by the chairman of the OLA Intellectual Freedom Committee, was published in the *OLA Bulletin* for July 1964. In 1970, the OLA Board of Directors adopted an "Intellectual Freedom Policy Statement" which was published in the *OLA Bulletin* for January 1971. In February 1974 an intellectual freedom workshop was held and in 1975, the Wednesday of National Library Week was designated by OLA as "Intellectual Freedom Day in Ohio."

The needs of users and nonusers received attention. Library services to the disadvantaged were discussed at the 1965 annual conference. Two years later, OLA cooperated with the State Library in sponsoring a series of conferences on library services to the unemployed and underemployed to launch the BOOKS/JOBS Project. Social responsibility was a major thrust at the 1969 annual conference with 321.8 (Dewey Decimal Classification number for representative democracy) buttons worn by large numbers of delegates. Concern with library services to children, evident in every period from 1895 to the present, received particularly eloquent expression in "The Ohio Children's Library Bill of Rights" adopted in 1972.

Awards and Honors

In addition to the honorary life memberships already mentioned, OLA adopted a Trustee Award Program in 1942. This was later expanded to include Citizen Awards, recognition of the Librarian of the Year, and special awards. The OLA Hall of Fame for librarians and trustees was inaugurated in 1970 and the Diana Vescelious Award (for younger librarians) in 1971.

Publications

Coverage of the plethora of leaflets, newsletters, pamphlets, periodicals, and books issued by a large and active body over a period of more than 80 years must be extremely selective. The publication of first importance is the *OLA Bulletin*, which began as the *OLA News Bulletin* in 1932 and greatly expanded its scope in 1950, winning H. W. Wilson awards in 1966 and 1974. *The Ohio Library Trustee* has been published by OLTA since 1939. In 1970, the *Ohio Libraries Newsletter* was inaugurated to bring timely information to the membership in months when the *Bulletin* does not appear. OLA published a *Handbook* to commemorate its 40th anniversary in 1935. Revised editions have appeared at intervals, the latest in 1976. The Junior Members Group prepared a *Classified Directory of Personnel of the Libraries in the State of Ohio* in 1936, which was updated in 1942, 1951, and 1957. *Standards for the Public Libraries of Ohio* appeared in 1972 and *Model Personnel Policy* in 1975.

Long-Range Goals

The following long-range goals were approved by the Board of Directors on June 8, 1973:

1. To vitalize all libraries as information resource centers for the communication of knowledge and ideas by visualizing and publicizing the concepts of the Association and implementing its programs with purpose and action.
2. To produce standards which shall include evaluation methods aimed toward increasing the effectiveness of library service.
3. To assure a membership informed concerning Association policies and programs through publications, statements, workshops and conferences in order to develop more fully the potential of members both in their Association activities and in their working environment.

4. To mobilize a vigorous public relations program which will inform the general public of the Association and its role in the advancement of library services.
5. To enlist the support necessary to carry out a planned legislative program to further the development of libraries and library service.
6. To establish and maintain an on-going program of personnel recruitment and to assert the Association's influence in the development of library education relevant to the needs of individuals and in the establishment of adequate certification for appropriate library personnel.
7. To conduct research, to prepare position papers on subjects of concern such as intellectual freedom and social responsibilities and to develop and implement a program for continuous review and promotion of these statements.
8. To establish the role of the Association as a catalyst in the development of inter-library activities of mutual concern such as exchange of personnel, acquisitions and continuing staff education.
9. To effect affiliate membership with other associations whose objectives can be supported by the Association.
10. To cooperate with other associations in such ventures as the initiation and/or support of positive legislative programs and of joint publications and meetings.
11. To advance the Association's role as an active chapter of the American Library Association.
12. To review periodically the validity and efficacy of the Association's constitutional objectives and long-range goals.

BIBLIOGRAPHY

Altman, Ellen, *The Ohio Library Association and the Ohio Library Trustees Association*, State Library of Ohio, Columbus, 1967.

Ohio Libraries Newsletter, 1970–, Ohio Library Association, Columbus.

Ohio Library Association, "Minutes of Annual Meeting and Executive Board," December 31, 1908–October 25, 1923.

Ohio Library Association and Ohio Library Trustees Association, *Handbook*, Ohio Library Foundation, Columbus, 1968.

Ohio Library Association Bulletin, 1932–, Ohio Library Association, Columbus.

Ohio Library Trustee, 1939–, Ohio Library Trustees Association, Columbus.

Power, Effie S., "Forty Years of Growth: A Brief History of the Ohio Library Association," in Ohio Library Association, *Handbook*, Ohio Library Association, Columbus, 1935, pp. [7–19].

A. ROBERT ROGERS

OHIO STATE UNIVERSITY LIBRARIES

1873–1892

When the first students reported to the Ohio Agricultural and Mechanical College, as it was first named, in September 1873, there was only one building on campus, the Main Hall, later known as University Hall. This building contained the first library, which was located in a first floor room, at the left of the main entrance. The first library had walnut cases, called alcoves, around the room. A small table near the window served the purpose for all accessioning, indexing, and charging. Information for charging was on a placard on the door and on a gray-blue label pasted inside the cover of each book. This indicated that the library was open to withdraw books on Tuesdays and Fridays from 1:30 to 2:00 P.M. Students were allowed to charge out two books and all books had to be returned or renewed within 2 weeks (*1*).

For the first 20 years, the library was managed by members of the faculty, who were only part-time librarians. Joseph Milliken, professor of languages, was appointed on April 10, 1874, as the first librarian. He served until 1876, when he resigned. Josiah Smith, a professor of ancient languages, was the second librarian. When Professor Smith became librarian, the library had fewer than 1,000 books. Professor Smith served as librarian until 1881. The library was presumably open for 3 hours each day for charging books; the library was used as a reading room the remainder of the time that University Hall was open. As successor to Professor Smith, the university appointed Samuel Derby as professor of Latin and librarian in 1881. Professor Derby left the presidency of Antioch College to accept the position.

Early appropriations for the library were meager, starting in 1874 with an annual appropriation of $100 and averaging near $500 during the time that the library was on the first floor of University Hall. Not all of the library budget was always spent, probably because there was no central authority to control spending the funds after they had been assigned to various departments. By 1884 the collection had grown to 2,402 volumes, with 13 periodicals received by subscription and 15 coming as gifts; and the library was running out of space for students and books. The General Assembly in that year appropriated $5,000 to move to larger quarters and for additions to the library. In the summer of 1884, the library was transferred to a room at the east end of the third floor of University Hall. The cost of the move and of equipment was only $600, leaving $4,400 to be spent for books. The $5,000 which the legislature appropriated in 1884 was the beginning of more adequate library budgets, ranging from $1,000 to $3,000 during the remainder of the time that the library was in University Hall.

The extra money for books allowed the library to increase its holdings to 4,135 in November 1884. When the library made this first move, the librarian was given the responsibility of cataloging the entire collection. There is no evidence that there was any catalog of the collection previously. An accession record was also started at this time. Professor Derby and two students prepared a divided card catalog with authors and titles in one file, and subject entries in another. No classification was used with the original catalog and books were given a fixed location within broad subject groupings.

Increasing student enrollment, from 299 in 1884 to 800 in 1893, and a growth in the book collection to 13,000 volumes soon made the library's quarters again inadequate. Finally, in 1893, the library was moved from University Hall to temporary quarters in the newly constructed Orton Hall. The temporary quarters were to last for 19 years.

1893–1926

Coincident with the move to Orton Hall, the university appointed a former library assistant as its first full-time librarian—Miss Olive Branch Jones. Miss Jones was a graduate of the class of 1887 at Ohio State and had worked in the library as a student assistant under Professors Derby and Smith. Though constantly afflicted with ill health throughout her life, and having no formal library training, her connection with The Ohio State University was to prove a long and rewarding one for the library.

Miss Jones presided over the move to Orton Hall, where the library occupied the entire east side of the building and also had use of a basement room and adjoining workroom. Across the main room from east to west ran an 8-foot screen of quarter-sawed oak and glass, with an opening through which books were issued. Later, to provide room for the increasing number of books, a balcony was built around the main room and the screen was removed.

Under Miss Jones, the first classification of the library collection was begun. She rejected the Dewey and Cutter classifications as not being appropriate for a college library. She obtained copies of the Harvard and California classification schedules and adapted them for use at Ohio State. She was anxious to establish a dictionary catalog, and the availability of printed cards from the Library of Congress in 1901 made this possible. At a meeting in January 1902, money was appropriated by the Board of Trustees to obtain cards from the Library of Congress, 2 months after they were available. The Library of Congress issued its first classification schedule (American History) in 1901 and The Ohio State University Libraries started using the Library of Congress cards and classification early in 1902. Ohio State was thus one of the first libraries to start cataloging and classifying under the Library of Congress system. As all books in the department libraries were placed under the control of the central library in 1903, these collections were for the first time brought under the bibliographic control of the card catalog in the Main Library, and all books were reclassified by the Library of Congress system. Beginning January 1, 1908, all current accessions were integrated into the new system.

For the first 2 years at Orton Hall, Miss Jones was the only full-time member of the staff. In 1895 the second full-time library assistant was appointed, and two additional positions were created the following year. By the time the library left Orton Hall, there was a total of 25 professional and clerical staff members.

In 1902 Miss Jones reorganized the staff, combining cataloging and reference work into a Reference Department, which included all lines of work which were carried on for the purpose of making books available to readers. This included classification, cataloging, circulation of books, and making reference lists.

When the library moved to Orton Hall in 1893 it was open from 8:00 A.M. to 5:00 P.M., Monday through Friday; and 9:00 A.M. to 5:00 P.M. on Saturday. In 1895 the library hours were extended: 7:30 A.M. to 5:30 P.M. on weekdays, and 8:00 A.M. to 4:00 P.M. on Saturday. The lack of dependable lighting kept the library closed at night until transformers were obtained in 1896. Starting in December 1896, the library was open weeknights, with hours eventually extended to 10:30 P.M. in January 1909. The library had no Sunday hours while at Orton Hall.

Miss Jones was interested in bibliography, and in 1895 she resumed orientation lectures, which had been given for a time by Professor Derby. She at first had students come to her office for informal talks about bibliographical matters. Starting in 1906, agriculture students were given critical lectures in their field. Three years later, credit courses were given in Economic Bibliography by Mr. Charles Reeder of the Reference staff, followed in 1911 by orientation work in agriculture. In 1912 the work in Economic Bibliography was expanded to include all the social sciences. Although not all of these courses were continued, because of lack of time and personnel, some courses on bibliography were always given while Miss Jones was librarian.

A large part of the increase in holdings when the library was in Orton Hall was the result of the receipt of government documents, which were reported as gifts. Alexander Cope, secretary of the Board of Trustees, secured over 3,000 volumes of government documents from President McKinley in 1899. In 1902 the library finally became a depository for government documents, a position which was made more permanent when Congress, in 1907, designated all land-grant colleges depositories for federal documents.

The early history of the library saw the rapid development of department collections on the campus. Several decades passed before the administration realized that the cost of duplication and the lack of bibliographic access to the collections was undesirable and put them under the control of the Library Council. By then, however, the pattern had been set, and the lack of space in the general library led to the growth of a great number of department libraries. In part, these libraries were created because of the lack of a strong general collection. The first department libraries were established in the sciences, and others developed in practically every department of the university. They were housed in faculty offices, adjacent classrooms, and seminar libraries. The control and development of the department collections was difficult. The Library Council lacked control over books purchased by the departments from supplemental supply and equipment funds. Not until 1903 did the trustees vote to place all the department collections under the administrative control of the library.

One of the important early departmental libraries was the Law Library. A gift from Mrs. Henry C. Nobel—January 1892, of 1,000 books of her late husband, a prominent Columbus attorney—formed the nucleus of the Law Library. The Law Library was first housed in the north recitation room of University Hall, where it was supervised by students from 8:00 A.M. until 9:00 P.M. In 1893 the

Law Library moved to one of the rooms occupied by the school in the Franklin County Court House. In the summer of 1894 the Law School and its library moved to the campus and were given quarters in Hayes Hall, the new Manual Training Building. The Board of Trustees then ruled the Law Library a part of the University Library, under the direction of the Library Council. Lack of space forced the Law Library to move in 1894 to Orton Hall. A recitation room for the Law Library was created by the partitioning of the basement of the library, with the north half being used by law students, adding to the already overcrowded conditions in Orton Hall. In 1898, with the collection reported to contain 12,500 volumes, space pressures from the University Library collection forced the Law Library to move from Orton Hall in September 1899. The Law School was first moved to University Hall and then, eventually, to the newly constructed Page Hall in June 1903.

Gifts constituted an important element in building up the library collection. Two of the most important for the general library were a gift from William Siebert and his brothers in 1898 of a library on German history, and funds for its development; and the Outhwaite Collection presented by Joseph H. Outhwaite (1901), with a fund for its development of books and documents relating to the American Civil War.

Increasingly, the library in Orton Hall became more and more crowded with books and patrons, as had been the case in University Hall. Miss Jones termed the period in Orton Hall one of "storm and stress" and said that the predominant impression was of an effort to accomplish more than could be done with the resources available, whether books, staff, or equipment. In spite of limited appropriations, Miss Jones laid the main stress on getting as many books as possible. Lack of equipment was also a problem, as every year brought the needs for more room for readers and for books and technical staff; and the library was in a constant state of adjustment as shelves replaced tables and space nearly disappeared (*2*). The library in Orton Hall grew from 13,000 volumes, at its origin, to 120,000 in 1913, and the student enrollment increased from 778 in 1894 to 3,829 in 1913; available space was all but exhausted. Unexpectedly, relief came for the overcrowded library. Professor Alonzo Tuttle, a professor of the College of Law, was a member of the Ohio Senate from Franklin County in 1909–10. He was instrumental in securing a legislative appropriation of $250,000 for a new library building. In December 1912 the first separate library building was ready for occupancy. The move, under the direction of Mr. C. W. Reeder and Mr. Paul North Rice, of 120,000 volumes was accomplished quickly and efficiently, and the entire library collection was moved in 2 weeks. Early in January 1913, the new library building was opened for service.

In spite of the crowded, often frustrating conditions in Orton Hall, some of the library staff looked back with nostalgia on the library there. A former student assistant in the library wrote facetiously of his evening chore of looking after the library cat, apparently a necessity to keep mice from the sheep-skin bound volumes. He recalled pleasant lawn parties given by the library staff, spoke amusingly of the political cabals and "affaires de coeur" that had been furthered at the library, and paid tribute to Miss Jones and other gracious members of the library staff, and to the scholarly calm of the old library (*3*).

An undergraduate on first entering the new library building related that after the crowded old library, the change was almost "too wonderful and pleasurable to be honestly realized." He recounted entering the white corridor "all alight with soft radiance," and it seemed as if he were in a dream as he mounted the broad front stairs. Finally, he came to the great Reference Hall, with its high windows, white walls, and "high curve of the vaulted arches—this was the climax of impressiveness" (*4*).

Miss Jones had had much to do with planning the new library. She had earlier shown that she was ahead of her time in advocating a shell-type library with movable partitions, to which additions could easily be made. She was not successful, however, in incorporating these ideas in the new library building. According to Miss Jones, the appropriation bill that passed the legislature stated that the money was for the construction of a complete library and that it was this use of "complete" inserted at the last moment that made the difference.

Originally, a $600,000 building had been planned but, instead, a $250,000 building was constructed. Among the main features of the new building were the storage of books in compact shelving outside of the reading rooms and a large Reference Hall on the second floor, 120 feet in length. Besides reference works, the Reference Hall had arranged around the room 10,000 volumes of standard works drawn from all fields of knowledge. Miss Jones felt that it would be better for the undergraduate to have this open shelf arrangement and that the undergraduate would be confused by access to a large collection. This arrangement would seem to the forerunner of the modern undergraduate library. Advanced students and research workers were admitted to the full collection in the stacks. At the south end of the Reference Hall was the Reserve Book counter, and the Bibliographical Room was back of it at the opening to the main stacks. North of the Reference Hall was what was called the Standard Literature Room. This room, with its dark paneling and fireplace, was expected by Miss Jones to be a place for general reading. It was kept open on Sundays for this purpose. On the first floor were a service room and stacks, a study room and lecture room, two seminar rooms and a checkroom. On the third floor of the library were eight rooms, a library, and a map room. The seminar rooms were in great demand by researchers as they provided a private desk to keep manuscripts and books. Miss Jones used the west part of the south wing for storage. Books were brought in at the basement door of the pavillion, and after being processed, they went to the new-book shelves before going to the stacks or Reference Hall.

Within 7 years after it was built, it was realized that the library had not provided adequate space for future growth. With room for only about 250,000 books, it was soon apparent that, as had been true at Orton Hall and University Hall, space would soon again become a problem. Writing in 1920, Miss Jones stated that up to that time, the library had been able to serve the undergraduate well, but not the research worker, and that a great university should provide adequate facilities for scholars. She suggested a plan for an addition so that the library would not suffer again the overcrowding that had marked the library in Orton Hall (*5*).

A library handbook was compiled in 1914. From the handbook we learn that library hours in the new building were from 7:30 A.M. to 10:30 P.M., Monday through Friday; and 7:30 A.M. to 5:30 P.M. on Saturdays. On Sundays the periodical room and the Standard Literature Room were open from 1:30 to 5:30 P.M.

During World War I, all the members of the library staff aided in the collection of books for the Army Camp Libraries, but because funds were limited, no attempt was made by the library to secure all foreign government publications. Each year, however, special funds were set aside to purchase books and documents relating to the war. These documents were selected by a special committee of the faculty, of which Professor W. H. Siebert was the chairman. Professor Siebert did a great deal of work in selecting the documents and in this way built up a well-selected collection of war materials (*6*).

Library statistics for 1926/27 showed that out of 35 large university libraries, Ohio State University ranked 14th, with a collection of 305,905 volumes. Three of the "Big Ten Universities," Illinois with 708,850, Michigan with 649,912, and Minnesota with 501,507 volumes, respectively, were substantially ahead of Ohio State. Miss Jones pointed out that the reason Ohio State trailed these universities was that other universities had much larger book budgets. She showed that 13 libraries spent more on books in 1926/27 than Ohio State and that six, including Michigan, Chicago, Illinois, and Minnesota, had spent over $100,000. Ohio State spent $52,570 for the same year (*7*).

In 1927 Miss Olive Jones retired as librarian. She continued to serve the university, however, as an associate professor of bibliography until her death in 1933. At the time of her death, she had served the university for 46 years, one of the longest periods of tenure ever held by a woman at the university. She saw the collection grow from 13,000 volumes in 1893, when she became librarian, to over 300,000 at the time of her death. Miss Jones felt that the library collection should have been larger, but she usually had only limited book funds available. She stated that recently a librarian at the University of California had conducted a survey in which there were 50 actions in which the library was tested. Ohio State met 44 of the 50 criteria. Six were not met because of the size of the staff, but Miss Jones considered it a wonder that a small staff could do so much. Illinois had a staff of 51 and Michigan, a staff of 117; but Ohio State had only a staff of 40, with a much lower budget. She concluded that Ohio State, if it had been included in the survey, would have ranked high in the list of ideals a library should try to achieve (*8*).

At the time that she was librarian, women tended to dominate the field, and Miss Jones made an effort to attract more men to the profession. She was an early advocate of a library school at Ohio State, as was her successor Mr. Manchester.

A summer library course had been held at Ohio State in 1898, under the direction of Dr. George Wire, at that time a librarian at the Evanston Public Library. A summer library school had also been scheduled to be given in 1918 but was cancelled because of the war. Miss Jones wrote that since the only library school in the state was at Western Reserve, one was needed at The Ohio State University.

Mr. Manchester, after he became librarian, also pursued the idea of a library school and asked President Rightmeyer in 1929 about the possibility of establishing one at Ohio State. Although President Rightmeyer expressed interest in the proposal, nothing was done at that time (*9*).

Perhaps one of the finest tributes paid to Olive Jones after her retirement came from Nelson McCombs, a former Ohio State graduate and library assistant under Miss Jones. At the time that he wrote he was librarian at the Washington Square Library of New York University. In a letter to Miss Jones, McCombs credited much of his development to the fine, tolerant spirit that made itself felt throughout her staff. He recalled the time when lively discussions were carried on about the new library building, and added that if there was one thing he prided himself on, it was his ability to discard traditional methods and improve on them, if possible—always to be approachable, and to take suggestions of faculty and staff for improvement. This ability, he credited in large measure to "imbibing the same spirit which permeated your staff and for which you were responsible" (*10*).

Professor William Lucius Graves, longtime popular professor of English, wrote in the *Ohio State University Monthly* that when someone said University Library, you thought of Olive Jones, and your thought was sure to be appreciative as one looked back over Miss Jones's "long years of strenuous service, of the enthusiastic spending of her strength, with the steady development in library equipment and efficiency." And he added that "she has her place in Ohio State history secured to her without any doubt" (*11*).

1927–1948

On July 5, 1927, Miss Maude Jeffrey, reference librarian, was elected to act as interim chairman of what was called a Library Cabinet, until a new librarian was chosen. In 1928 Mr. Earl N. Manchester, who had been librarian at the University of Kansas for the past 6 years, was appointed librarian. When Mr. Manchester came to Ohio State, the crowded conditions in the library, already apparent before Miss Jones retired, had begun to reach the critical stage. Mr. Manchester had hopes for a library building addition in 1928, but conditions in the state and university were not favorable, and a new period of struggle for space began. Mr. Manchester reported that on June 30, 1929, the library had 335,950 volumes, and that 18,450 books were added during the year and 21,618 volumes were cataloged. The librarian noted that 1,022,437 persons entered the library and that 227,569 volumes were circulated. He also reported that the loan period was extended from 1 to 3 weeks (*12*).

For the year 1929/30, the appropriation for books was $50,000, bringing the appropriations back up to the scale for 1923/25 and 1925/27. The total accessions for the year were 23,900, of which 11,500 were purchased volumes, and the total number of volumes in the library was 395,850 (*13*).

The brighter picture of library appropriations suddenly took a bleak turn with the onset of the depression years of the 1930s. All university budgets took heavy cuts, 150 positions in the university were abolished, and the faculty who remained were asked to take reductions in salary. Library budgets were, of course, cut and in 1932 the library had to call on the State Emergency Board to complete its periodical subscriptions. In addition, in January 1932, $1 was added to the university fee cards to help pay for periodicals and continuations and to keep the library checkroom open. Only 3,643 volumes were added to the library in the year 1931/32, as compared to 10,524 the year before, and more books were received as gifts than by purchase.

Just as the worst effects of the Depression started to lift, and the library might have expected to receive larger appropriations, it received another financial setback when Governor Davey's vetoes of university appropriations included the provisions for $20,000 for library books and $25,000 for periodicals in 1935/36. The veto cut was even worse than in the Depression because no money at all was available for new books. Once again, emergency funds were found to pay book bills for 1935. A deficit act supplement to the 1936 appropriation bill passed the legislature, but again book and periodical items were vetoed by the governor. The university allowed the library $17,000 from general activity fees to be used for 1936 periodicals. As a result of the vetoes, 2,291 fewer volumes were added to the library than during the previous year.

An emergency appropriation bill finally became law providing some funds for the 1936/37 fiscal year, and 18,343 volumes were added to the library. In mid-July 1938, the library was over the one-half million mark, and in 1940 the collection stood at 552,904 volumes.

In spite of the Depression and budget cuts, the library collections had grown from 219,000 volumes in 1920, to 360,000 volumes in 1930, and to 565,000 volumes in 1940. Thus the library had kept up to Fremont Rider's dictum that the library should double its collection every 16 years.

An important change in library hours was made in 1930 with the opening of the library from 2:00 to 6:00 P.M. on Sundays during the winter quarter, after a formal petition by students (*14*). The Sunday service proved to be popular and student use of the library was heavy, so the service was continued and the hours of opening eventually extended.

Prior to 1932 there had been no bindery in the library building, but bindery preparation was done there for many years under the direction of Miss Gladyce Scott. Books were bound by the University Press in the Journalism building. On July 18, 1932, the University Press gave up binding library books, and Mr. Manchester persuaded the administration to turn over some of the machinery and a part-time worker to the library. The bindery was then moved from the Print Shop to the library basement (*15*).

During the Second World War, the library participated in several campaigns to collect books and periodicals to be sent to military camps and United Service Organizations. At a meeting of the Library Council in January 1942, Mr. Manchester reported on the establishment of a War Information Center at the university, one of six centers in the state of Ohio. The center was located in the Main Library, where the library maintained a collection of current materials on the war (*16*).

By 1926 the department libraries had grown to nine. These were, with the dates of their establishment: Botany and Zoology (1917), Brown Hall (Architecture and Civil Engineering, 1915), Chemistry (1925), Commerce (1925), Law (1909), Lord Hall (Ceramics, Metallurgy and Mineralogy, 1915), Orton (Geology, 1917), Medical (1925), and Education (1926). These were the main department libraries, but there were many other special libraries or office collections varying greatly in size. In 1930, the Alfred Dodge Cole Memorial Library of Physics was established. In that year, 13,827 volumes were added to the department libraries. Of these, Law, Education, and the new Physics Library were the largest. Thirty-one percent of the library collections were outside the Main Library in the 1930s, in many widely scattered locations.

Moving of books from the Main Library to the department libraries caused overcrowding in these libraries, which they were ill-equipped to handle. In 1938 the 13th department library, the Library of Social Administration, was established.

The depression years and the governor's vetoes continued to delay the building of the badly needed library addition. In 1938 a faculty committee appointed by President Rightmeyer to study the needs of the university reported that the most urgent need was for an addition to the library. They reported that the library was built to care for a student body of 3,500, a faculty of 200, and a graduate student body of 150. Now, 25 years later, the same building still attempted to serve a student body of 16,000, a faculty of 900, and an enrollment of 3,200 graduate students.

Department libraries were increased from 9 to 15, and much material was transferred to the new departmental libraries, thus relieving some of the pressure on the stacks in the Main Library. A library stack annex was made temporarily available by the erection of a small addition to the Physical Education building for storage of some 75,000 seldom-used volumes. Additional space was found for infrequently used volumes in the basement rooms of Hamilton and University Halls. These makeshift arrangements made record keeping of books transferred from the Main Library to storage and to and from department libraries difficult and imposed a heavy burden on the library. Conditions continued to grow worse during each year before an addition was built. A faculty committee called the library "a mad house with books scattered all over the campus, where only one student in twenty can find a place to sit" (*17*).

President Rightmeyer, in 1938, called for an addition to the library. He said that the building had long been inadequate, and that Mr. Manchester had faced an impossible task for years in finding and maintaining an adequate and highly trained staff, operating in insufficient quarters, with an undersupply of books and periodicals. The president added that Mr. Manchester had carried the work forward buoyantly and with unflagging zeal had organized a staff of maximum ability and rendered the best library service possible under the conditions. He urged, however, that first priority be given to the building of a new library addition (*18*). Although there was no lack of effort to improve the library building, the depression years, the governor's vetoes, and then World War II continuously postponed the start of the project.

Hopes for relief, however, did not materialize in 1941, and early in 1945 President Bevis again called for a new library building. He said that the dominating structure on the campus was not the library, but the smokestacks of the university power plant and added that plans were being made for a new library addition, which would ultimately make the library Ohio State's dominating center (*19*). Once again, however, the library addition was postponed, as President Bevis reported that priority in the budget had to be given to classroom space for returning veterans. Finally, money was provided in the budget for the new library addition, and in the spring of 1949 work began on the $2,500,000 addition to the library. Two years later, in 1951, the addition was completed. The dedication ceremonies for the new addition took place on June 2, 1951, in front of the library. The combined building was renamed the William Oxley Thompson Memorial Library.

With the addition to the library completed on June 30, 1952, Mr. Manchester retired as librarian. As librarian for 24 years, he had led the library during the difficult years of the Depression and World War II. He had had to direct a library system that rapidly became more inadequate with each passing year in its ability to handle the needs of a large state university. Nevertheless, in spite of handicaps and severe shortage of space, he somehow managed to provide library services and maintain a loyal staff. Almost of necessity, he was forced to expand the department libraries, but he made certain that patrons were given good service in all campus libraries. The service aspect of library work was one to which he attached great importance. During his tenure as librarian, the library collection increased from 310,000 to 958,111 volumes, thus tripling the collection in slightly more than two decades. There was little in the book collection that he was unaware of, because of his deep interest in books and literature in many fields. As his successor Dr. Branscomb wrote—it is unlikely anyone will ever know the collections as well as he did. And he added that, as a person, Mr. Manchester was cordial, good humored, and patient, for he loved people as well as books (*20*).

1948–1970

The successor to Mr. Manchester as director of libraries was former associate director Lewis C. Branscomb. Prior to coming to Ohio State as associate director in 1948, Dr. Branscomb had served for 3½ years as assistant director in charge of Public Services at the University of Illinois and had also headed libraries at South Carolina and Mercer Universities. He received his A.M.L.S. at Michigan and his Ph.D. at the Graduate Library School at the University of Chicago.

When Dr. Branscomb took over the directorship of the University Libraries, his first task was to organize services in the new library addition. The new addition had on the first floor two new reading rooms; on the second and third floors, four graduate reading rooms; and the tower provided room for 12 floors of steel stacks and individual study carrels. At first, only six floors of stacks were provided with shelving, giving a total book capacity of 540,000 volumes when the library was first opened. The total seating capacity was 1,800. Dr. Branscomb organized the present arrangement of the library. The Catalog Department was placed on the northwest side of the first floor, the Acquisitions Department on the opposite side, and the Circulation Department between these two departments. New services included an enlarged Map Room on the second floor and a Browsing Room on the ground floor. As a result of increased space, an enlarged Rare Book Collection and The Ohio State University Collection of records of the university were brought together in a room on the third floor (*21*).

Among the innovations of the library was the Browsing Room. Mrs. Margaret Browning was put in charge of organizing and developing this collection on its present basis, setting a standard of excellence not only for its book collection, but also instituting the program of Reader's Advisory services, coffee hours with distinguished guests, and continuing art exhibits. These have continued to be features of the Browsing Room to the present.

During Dr. Branscomb's first year, a total of 51,008 volumes were added to the library collections, and Ohio State—with 958,111 volumes—ranked 17th in the country in total number of volumes. On May 26, 1953, the University Libraries sponsored a public program marking the processing of the one-millionth volume. The expenditure for books during 1953/54 was $200,062, and the number of books circulated outside the library was 183,728. During 1953 the library became involved in two important cooperative ventures. The first was the Farmington Plan. The fields designated to Ohio State were ceramics, sexual ethics, race relations, welding technology, factory management, and athletic sports. Ohio State also assumed responsibility for Cyprus, Cyrenaica, and Tripolitania.

The second cooperative venture of importance was joining the Midwest Inter-Library Center, now called the Center for Research Libraries. Ohio State became the 16th member on January 2, 1953.

The Library Council underwent a change in 1954. In that year, the membership of the Library Council was enlarged to include four teaching members of the faculty appointed to 4-year terms and, ex officio, the academic vice-president, the dean of the Graduate School, and the director of libraries. The teaching faculty member replaced the director of libraries as chairman. In the fall of 1967, a member from the Council of Graduate students became a full voting member of the Library Council.

Instruction in the use of the library was expanded during 1954/55 with tours of the Main Library during the student's orientation program, one or two lectures by a librarian, and survey courses by several colleges. In March 1955, in response to student requests, Sunday hours were extended: 2:00 to 10:00 P.M. beginning March 6. Reference service greatly increased during the year, totaling 25,592 requests. The following year inquiries increased to 32,299, and reference requests have continued to be heavy during recent years.

The appropriations for the year 1956/57 were $55,000 for books and $25,000 for periodicals. Binding during that year was the second highest on record, totaling 23,726 volumes for both Ohio State and outside commercial binding. Gifts and Exchange were also active, having received 40,164 items.

The Central Serial Record was completed during the year and brought to a close a major project that had taken 5 years to complete, one which provided the University Libraries with a major bibliographic tool. During the year 1956/57, the total circulation outside the library was 308,265, and the use of the library materials within the library was 798,718. A new venture during the year was the starting of Traveling Libraries of general works for the use of students in outlying libraries who found it hard to get to the Browsing Room. This proved to be a successful project and has since been continued and expanded.

An outstanding gift of the year was the fine collection of 17th-century Spanish literature collected by Professor Claude Anibal, which was donated to the University Libraries by his widow.

In 1960 Dr. Branscomb noted that Ohio State, with a collection of 1,312,786 volumes, ranked 17th among university libraries. The libraries' expenditure of $331,911 for books and periodicals placed it 14th in the country, and its staff of 162 ranked 11th in the United States.

New programs adopted during the year 1960/61 included the institution of a new Slavic-language program at Ohio State, with an initial crash program to build up the library collections. Also, a new project begun jointly by the Department of English, the University Libraries, and the Graduate School was the Hawthorne editing project, later called the Center for Textual Studies, which is publishing the definitive editions of Hawthorne's works. The project has its quarters in the Main Library, and has made use of the new Hinman collating machine for detecting textual differences.

The number of volumes processed in 1961/62 was 97,953, making the total in June 30, 1962, 1,520,597 volumes. The expenditures for books, periodicals, and other library materials was $422,897, and the number of serial titles received was 15,557. Bound volumes numbered 16,452, and 525,536 volumes were circulated outside the libraries, a big increase over the previous year. Volumes used within the libraries numbered 659,027. In 1947 the University Libraries had 734,840 volumes, therefore the size of its collection had doubled in less than 15 years.

A new important addition to the Main Library was the installation of the first Xerox 914 copying machine, which immediately began to receive heavy use. Since its installation, many copying machines have been added in the Main Library and its branches; such now make 5,000,000 copies each year.

Important for the housing of the library collection was the completion of shelving and carrels for decks eight and nine of the Main Library in the fall of 1961. A separate Documents Room under the supervision of the Reference Department was established in a room next to the Reference Room. An annual library lecture series was established during 1961/62, and also the position of curator of rare books and special collections was created.

Among significant gifts in 1962/63 was that of Mrs. James Thurber, who gave the first of several manuscripts which have steadily been enlarged to form an outstanding collection of one of Ohio State's most gifted alumni.

Dr. Branscomb, noting the lack of space in the library for students, especially at night, said that the situation would get worse as the enrollment went beyond 30,000 and stressed the need for a separate undergraduate library.

In the year 1963, Dr. Branscomb achieved an important advance for the University Libraries, one which he had long sought. This was the securing of faculty rank and title for the entire libraries professional staff. This was approved by the Board of Trustees in July 1963 and meant that the libraries' professional staff would operate under the same rules as applied to the rest of the faculty of the university. It is interesting to note that James H. Canfield, who was president of the university from 1895 to 1899, advocated not only higher salaries for the library staff, but also urged that they be given faculty status. He stated that the "Librarian of a University ought to rank in general culture, in special training and equipment, in definite purposes, and intensity of life—in all qualities and characteristics—as a full Professor at the head of a Department" (*22*). He further wrote that the head of a library division should rank as an assistant professor, and library assistants as instructors (*23*).

Nothing was done about this suggestion, however, and President Canfield resigned shortly thereafter to become librarian at Columbia University. It was not until many years later that, through the untiring efforts of Dr. Branscomb, the library was able to achieve this goal. Previously, some selected positions had already received faculty status, but the status did not extend to all professional staff. As Dr. Branscomb remarked, the granting of faculty rank helps secure top quality librarians and opens the door to full participation by the librarians in the research and service programs of the university. Among other new accomplishments in 1962 was the inception of an evening discussion program on problems and recent developments related to librarianship.

A major acquisition in the year 1964/65 was the library of Professor Hans Sperber of the German Department, consisting of 6,000 volumes of German and French literature, philosophy, and culture, including many early imprints.

In 1965 Ohio State was 16th in total book collections among colleges and universities, fifth in size among the "Big Ten"; but in expenditures for books it ranked 25th among United States libraries and eighth in the "Big Ten."

In the fall of 1966 some progress was made on the problem of space for undergraduates with the start of an Undergraduate Library within the Main Library. Two large reading rooms, one of which was constructed from captured ceiling space in the second floor reading room, were set aside for undergraduate study, reference, and reading, with a seating capacity of 700. The rooms had a shelf capacity of about 30,000 volumes, and their open shelves emphasized material on the humanities and social sciences. Housing of this library in the Main Library was only a first step toward a much needed library building for undergraduates.

An important step in acquisition policy was taken in 1967, with the start of the Current Imprints Program. This program is one in which a contract is set up with a dealer, who supplies all material at the college level in most areas of instruction published in a particular country. As first established, the program included order programs in the United States, the United Kingdom and Commonwealth, and German-language programs in Germany, Austria, and Switzerland. In addition, there were other blanket order programs, including LACAP (Latin American Cooperative Acquisition Program), Farmington, Slavic, and Medical. Started on a trial basis, the Current Imprints Program has won the support of a large majority of the faculty and has been continued.

In the fiscal year 1967/68, the library spent a record of $1,211,595 for the purchase of library materials. Volumes added to the library were 119,730, for a total of 2,103,723 volumes. Ohio State was 14th in library holdings among university libraries in the United States and Canada. On November 21, the libraries and the university celebrated the addition of the two-millionth volume to the collection of the libraries. It had taken about 80 years to obtain the first million volumes. The second million came considerably faster, being acquired in 14 years. The number of serial titles received in 1967/68 rose to 18,477 and the number of volumes cataloged during the year to 111,707. Binding total for the year was 33,133 items and the total circulation of all library units was 1,388,691. The East European holdings rose to 67,230 volumes and the East Asian Program added 6,417 volumes to its collection. Other areas that were strengthened were early American fiction, James Thurber, and the Hebraica-Judaica collection.

Dr. Branscomb secured a reorganization of the regional campus libraries at Lima, Marion, Mansfield, and Newark, and they became an integral part of the University Libraries, responsible to the director of libraries. A separate processing unit was set up to catalog and acquire material, with funds paid by University College.

Dr. Branscomb stated that the four remaining empty stacks had just been equipped with steel shelving but, despite this, the capacity of the stacks would be exhausted by 1973. Plans for the new Health Sciences Library were approved by the National Library of Medicine, which would support part of the building costs. Plans for the new library featured an automatic storage and retrieval system. The building opened in 1973 with space for 1,500 readers. The automated bookstacks, despite early difficulties, proved workable.

1970–1975

In 1967, the then assistant director of libraries, Hugh C. Atkinson, drafted a paper describing an on-line catalog information and circulation system. From this preliminary document a contract was issued to the International Business Machine

Corporation to design and program an automated system. As the system evolved, and stands now, access is provided to the approximately 1,500,000 titles in the university collections by author, author/title, title, call number, and classification number. Such access is provided on-line with almost instantaneous response time. With an abbreviated search code made up of the first four characters of the author's last name and the first five characters of the first word of the title (or similar codes for the various accesses), one can, through any terminal of the over 50 throughout the library system, search all the libraries' collections. The system displays a record approximately 103 characters in length, which gives the author/title, LC card number, date of publication, and the detailed holdings of each of the libraries' copies of the item. Items so displayed may be charged out by the entrance of a patron identification number. Any terminal through the library system may charge any book in the system; however, to protect the integrity of the decentralized collections in the departmental and college libraries, books may only be discharged from terminals located in their "home" library.

Each year over 4,000,000 searches are made of the holdings. Circulation of both reserve and other manual charges, as well as the automated charges, is approximately 2,000,000 items per year. The system incorporates a host of other features including the automatic sending of overdue notices, billing recall notices, statistics, search requests for "snags," and the like. The system has been described in a number of publications both in the U.S. and abroad.

As charter members of the Ohio College Library Association (OCLC), Ohio State University Libraries have expanded their automated cataloging and other library routines concurrent with the expansion of the services of the OCLC. Machine-readable records produced for almost all of the cataloging now performed at the University Libraries is used to update the catalog access and circulation system. Plans call for the continuation of the card catalog in machine-readable form in the very near future.

In 1971 Dr. Lewis C. Branscomb retired as director of libraries to accept the James Thurber Professorship in the Graduate School. Mr. Hugh C. Atkinson, assistant director of libraries for public services, was named as his successor as director of libraries. In 1973 plans were firmed for the conversion of the second floor of the Ohio Historical Society to an Undergraduate Library. The remodeling project was funded and completed in the late summer of 1975, and the new Undergraduate Library opened for business in August of 1975. Notable features of this facility include a library for the blind, which provides many of the modern technological reading assistance devices now available for the blind and partially sighted. This facility supplements the Learning Resources Center on the West Campus of The Ohio State University, a structure opened in 1971 providing approximately 1,200 seats, facilities for library service to undergraduates in their first 2 years, and a large and growing collection of audiovisual materials, electronic carrels, and other multimedia presentations of instructional materials.

By 1975 the libraries' collections had grown to over 3,000,000 volumes and an annual budget of $5½ million. With some 10% of the budget devoted to automated activities, the libraries are clearly committed to the transfer of many clerical and record-keeping activities from manual systems to the newer technology. It is through such means that it is hoped that the book collection and the professional services may be continued and expanded. The introduction of such automated, fast-response systems has met with general satisfaction on the part of the campus community, and it is hoped that such satisfaction will continue—for one of the goals is to make librarianship less of a labor-intensive operation than it is now and, therefore, less subject to the ravages of inflation.

REFERENCES

1. Much of the material for the early history of the library has been taken from the doctoral dissertation by James Skipper, completed at the University of Michigan (see Ref. *22*), and from material in the University Archives.

2. Olive Jones, "The Library in Orton Hall," *Ohio State Univ. Monthly*, **4**, 11–15 (January 1913).

3. Max Morton, "Those Were the Happy Days," *Ohio State Univ. Monthly*, **4**, 15–17 (January 1913).

4. J. Lewis Morill, "The New Library—Undergraduate Point of View," *Ohio State Univ. Monthly*, **4**, 8 (January 1913).

5. Olive Jones, "Our Library Building," *Ohio State Univ. Monthly*, **11**, 9–10 (April 1920).

6. Olive Jones, "The University Library and the War," unpublished manuscript. Director of Libraries, 1900s and 1920s.

7. Olive Jones, Report to President Rightmeyer, June 14, 1928.

8. Ref. *7*.

9. Earl Manchester, Report to President Rightmeyer, January 28, 1929.

10. Nelson W. McCombs, Letter to Olive Jones, April 7, 1931.

11. William Graves, "Crow's Nest," *Ohio State Univ. Monthly*, **19**, 245–246 (March 1928).

12. Earl Manchester, "Library Report," 1928/29.

13. Earl Manchester, "University Library," in *Sixtieth Annual Report of the Board of Trustees, 1930*, Ohio State Univ., Columbus, 1930, pp. 253–261.

14. Ref. *13*.

15. Ilse Wilhelmi, *History and Development of the Departmental Libraries at Ohio State University from 1931–1965*, Ohio State Univ., Columbus, Ohio, 1966, p. 11.

16. "Library Report," 1940–42; and "Library Report," 1942–43–44.

17. "Urgent Needs Are Outlined," *Ohio State Univ. Monthly*, **29**, 21–22 (July 1938).

18. Earl Manchester, "University Library," in *Sixty-eighth Annual Report of the Board of Trustees, 1938*, Ohio State Univ., Columbus, Ohio. 1938, pp. 128–130.

19. *Ohio State University Monthly*, **36**, 1–2 (February 1945).

20. *Report of the Director of Libraries for the Fiscal Year 1954/55 Ending June 30, 1955*, The Library, Columbus, Ohio, 1956, pp. 10–11.

21. Much of the material for the section on the library under Dr. Branscomb has been drawn from his annual reports: *Report of the Director of Libraries for the Fiscal Year 1952/53 and 1953/54–1967/68*, The Library, Columbus, Ohio, 1955–1969.

22. James Skipper, "Ohio State University Library, 1873–1913," Ph.D. dissertation, Univ. of Michigan, Ann Arbor, 1960, pp. 280–281.

23. Ref. *22*.

George Schoyer
Hugh C. Atkinson

OKLAHOMA LIBRARY ASSOCIATION

The Oklahoma Library Association (OLA) was organized at the Carnegie Library in Oklahoma City on May 16, 1907, just 6 months before the Oklahoma and Indian Territories achieved statehood. Only eight public libraries existed at that time, and librarians of six of them attended this first meeting. Others among the 19 charter members included the librarians of the normal school, the state university, and a private university; and club women and student assistants. According to an early report, this small group banded together "for the discussion of professional problems, and to assume leadership in bringing Oklahoma to the forefront in library progress." The object in the first constitution was simply stated: "The purpose of this Association shall be to promote library interests in the State of Oklahoma."

It is interesting to note that among the charter members of the association was Milton J. Ferguson (1879–1954), then librarian of the University of Oklahoma, who became the first president of the group. Mr. Ferguson left the university before the end of his term to become associated with the California State Library, where he served as state librarian for some years. Later he became director of the Brooklyn Public Library, and in 1938 he was elected president of the American Library Association (ALA).

Two of Mr. Ferguson's student assistants were present at that May 16 meeting, and both assumed leadership roles and gained prominence in librarianship during their long professional careers. Carl H. Milam (1884–1963) served as secretary of the American Library Association from 1920 to 1948, and then became the first director of the United Nations Library until his retirement in 1950.

Jesse Lee Rader, the other student assistant present on May 16, 1907, remained in Oklahoma. He was appointed acting director of the University of Oklahoma Library when Mr. Ferguson left the state. He served as university librarian from 1909 until his retirement in 1952. Under his guidance the University of Oklahoma School of Library Science was organized in 1929. Mr. Rader held many offices in the association, and received its Distinguished Service Award.

At the second meeting of the Oklahoma Library Association, in 1908, the formation of a Library Commission was discussed, as it was at many succeeding meetings; however, this agency did not become a reality until 1919. Mrs. J. R. Dale, who must be numbered among the pioneers, became the first secretary of the newly created commission, a position she held until her retirement in 1950. She served the OLA in many capacities, and recruited many young people to the profession. Her visions of statewide service still endure. The Dorothea Dale Continuing Education Fund, privately endowed in 1970 under the supervision of the Oklahoma Department of Libraries, sponsors an annual continuing education activity in Mrs. Dale's honor. Mrs. Dale was also honored with the association's Distinguished Service Award.

In 1957 the Oklahoma Library Association and the State of Oklahoma celebrated their 50th anniversaries. This Golden Anniversary meeting was held in

Oklahoma City, March 21–23. One of the highlights was the recognition of 12 librarians who had more than 35 years of service each. Among those honored were two charter members. The names on these citations make up the early history of libraries in the state. The October 1957 issue of the *Oklahoma Librarian* (Volume 7, Number 4) is devoted to this anniversary and recounts the history of the association during its second 25-year span.

A few meetings of the OLA have been held with neighboring states. In 1916 the Oklahoma and Kansas Library Associations held a joint meeting in Arkansas City. In 1922 Oklahoma joined with five other states to form the Southwestern Library Association in an organizational meeting in Austin, Texas. From 1937 to 1947 the Oklahoma Library Association held its state conferences in alternate years, with a business meeting scheduled during the Southwestern Library Association conferences. With the changing and accelerated library development in this state, this plan was abandoned in 1947, and annual conferences have been held in the state since that time. The relationship with Southwestern Library Association has been a close and active one, with results beneficial to all member states. In 1969 this regional association received the J. Morris Jones–World Book Encyclopedia–ALA Goals Award for an extensive, in-depth study of the relationship of national, regional, and state library associations. Mrs. Grace T. Stevenson headed the project, and the results were published by the American Library Association in 1971 (*1*). The report delineates the responsibilities of the three levels of association programs and activities.

Legislative Activities

The Oklahoma Library Association has played an active role in sponsoring and in assisting in the passage of library legislation of all types, often after many years of effort. The years have also developed active support of some key legislators, although with the changing personnel of the legislature, the process must be repeated often.

As mentioned earlier, the first success was the formation of the Oklahoma Library Commission. This was followed in more recent years by the joining of that agency with the Oklahoma State Library in 1953. In 1955 Oklahoma librarians were instrumental in the passage of the Multi-County Library Act, the culmination of work of the OLA's Select Committee on State Planning.

With the passage of the Library Services Act, an association committee was appointed to work with the Oklahoma State Library in an advisory capacity, a relationship which still exists.

Oklahoma's first Governor's Conference on Libraries, in September 1964, was sponsored by the Oklahoma Library Association and the Oklahoma State Library, to focus attention on the status of Oklahoma libraries and the problems which could be solved by legislation and adequate financing. A direct result of this conference was a small allocation for state aid, the first such appropriation and one which has continued to the present, although in a most limited way.

One of the major projects of recent years was the association's work on the revision of public library laws of the state. The Oklahoma Library Code was enacted during the 1967 session of the legislature, after months of work, study, hearings, and meetings of many members of the OLA working with trustees, laymen, and legislators. In the new Code, the Oklahoma State Library became the Oklahoma Department of Libraries.

In the 1976 session of the state legislature, the association successfully supported permissive legislation to increase the mill assessment for library support for multicounty and metropolitan libraries and to permit the latter to participate in multicounty systems. This proposed amendment to the state constitution will be submitted to a vote of the people in the general election of 1976. For a number of years there has been an active Library Development Committee to initiate, with Executive Board approval, legislation relating to libraries, and to call for citizen support through its network of contacts.

Present Organization

The *Constitution and By-Laws*, last amended in 1973 (*2*), provide for eight divisions and three roundtables: Children and Young People, College and Universities, Library Education, School Libraries, Public Libraries, Reference, Technical Services, and Trustees Divisions; and the Automation, Social Responsibilities and Printing Arts Roundtables.

The administration of the OLA is vested in the Executive Board of elected officers: president, first vice-president–president elect, second vice-president (the *Constitution* requires that this officer be a lay member), secretary, treasurer, immediate past secretary, immediate past president, and the ALA Chapter councilor. Nonvoting members are the editor of the *Oklahoma Librarian* and the executive secretary. Election of officers is by mail ballot. The Executive Board meets monthly, and meeting times and places are published and open to the membership.

Provision for a part-time executive secretary was made in 1972 and filled for the first time in May 1974 with the appointment of Frances Kennedy, a past president of the association, upon her retirement as director of the Oklahoma City University Library. The official calendar of meetings, workshops, etc., is maintained in this office.

The OLA has maintained its status as a member chapter of the American Library Association since 1956.

Committees carry on the various activities of the association. Among the most active in recent years have been the Library Development Committee, and the Continuing Education, Membership, National Library Week, and the Sequoyah Children's Book Award Committees. The president and executive secretary are ex officio members of all committees except the Nominating Committee.

The Oklahoma Library Association's first Intellectual Freedom Committee was appointed in September 1950 to investigate what has become known in the profession as the Bartlesville Case. Members of this first committee were Mrs. Mary Hays Marable, Ralph Hudson, and Frances Kennedy. Their work resulted in a report which was published in the *ALA Bulletin* (3) and summarized in the *Oklahoma Librarian* (4).

A union list of serials held by Oklahoma libraries was first proposed in the College and Universities Division meeting in 1954, but the task at that time seemed insurmountable. In 1974 such a list was published, both in hard copy and microfiche, through the combined efforts of the University of Oklahoma Libraries, Oklahoma State University Library, Oklahoma Department of Libraries, Oklahoma Library Association, the Board of Regents for Higher Education, and the devoted work of several librarians. Alice Pattee, a retired librarian formerly on the staff of the Oklahoma State University Library, completed the final editing and preparation for reproduction and was honored by the OLA in 1974 with a special award.

The association supports a Governor's Mansion Library with an annual budget item for new books selected by the governor and his family, and processed by the Oklahoma Department of Libraries staff.

A "spin off" of the Oklahoma Library Association is the Past Presidents Group, which annually finances a new officers orientation workshop (5). Past presidents of the association have been breakfasting together at each conference since 1954, and each has contributed $10.00 per year to a fund whose purpose was yet to be determined when the meetings first began. By vote of those attending the 1971 breakfast, the fund will be reserved for these workshops for new officers. Members of the Executive Board, division and roundtable chairpersons and chairpersons-elect, committee chairpersons, and several past presidents, who serve as consultants and resource persons, participate in this all-day workshop.

Publications

The need for an official voice for the OLA was recognized and discussed at the 1946 meeting, held jointly with Southwestern Library Association in Phoenix, Arizona. It was not until 1950, however, that the *Oklahoma Librarian* was finally launched as a semiannual publication. Since 1954 it has been issued as a quarterly. Each issue contains the minutes of Executive Board meetings, and the *Constitution and By-Laws* are printed when revised. The July issue each year summarizes the annual conference and contains committee, division, and roundtable reports. The membership roster is also printed in this issue. The *Oklahoma Librarian* is the history of the association through the years, a forum for differing points of view, and a record of gains and losses in Oklahoma's library world.

Volume 1, Number 1 of the *President's Newsletter* was distributed to members in October 1971 to fill the need for more current news than a quarterly could achieve. President Roscoe Rouse published this first issue, and succeeding presidents have issued newsletters at irregular intervals when there is need.

An *OLA Handbook* was first prepared in 1967, and revised in 1973. In this publication can be found the policies and procedures of the association and the duties and responsibilities of officers, divisions and roundtables, and committees.

Awards

The OLA established its Distinguished Service Award in 1950, and since that date 16 librarians have been so honored. The present *Constitution and By-Laws* state that the award may be granted "to an individual librarian in recognition of inspired leadership, devoted service, and unusual contribution to Oklahoma libraries and to the profession of librarianship." The requirement of 10 years of such service was shortened recently to 5 years. The award need not be made annually, and its irregularity enhances its prestige.

The Citizens Recognition Award may be granted to a nonlibrarian who has demonstrated "a sound and special interest in libraries and library service." This, too, is a prestigious award, and is made only when well earned.

The Sequoyah Children's Book Award is made annually to the author of the favorite book of the school children of Oklahoma. The award was established in 1958 and is the responsibility of a committee of the OLA. A master list of books is compiled annually by this committee, and the children elect their choice. The final event of each annual conference is the Sequoyah Book Award luncheon honoring the author of the book selected.

A Citation of Merit was awarded in 1975 by the Social Responsibilities Roundtable "for the creation of a program that represents a step toward expanding library service to the whole community and to that program which attempts to search for and anticipate societal problems as they relate to library services in Oklahoma."

Conclusion

Not all of the "greats" in Oklahoma librarianship lived in the pioneering era when the OLA was founded. And no account of the Oklahoma Library Association would be complete without at least brief mention of two "giants" of today, who have achieved national prominence on the library scene.

Edmon Low has served with distinction in Oklahoma and across the nation. His presidencies include this association, the Association of College and Research Libraries, and the Southwestern Library Association. He was elected vice-president of the American Library Association for two terms and was presented the coveted Lippincott Award in 1967. Following his retirement after 27 years as director of the Oklahoma State University Library, he became a full-time faculty member at the University of Michigan Library School and is presently librarian at New College, Sarasota, Florida. Retirement is not in his vocabulary. His influence on library legislation nationally is monumental, and his name appears frequently in the *Congressional Record* as a participant in hearings on legislation affecting libraries. He is the library profession's authority on the intricacies of copyright revision and what it means to libraries. His Distinguished Service Award from the Oklahoma Library Association was well earned.

Edmon Low was presented the highest award of the ALA on July 22, 1976, during the Centennial Conference of the ALA "in recognition of your remarkable service to the library profession."

Allie Beth Martin became president of the American Library Association at the conclusion of the 1975 San Francisco conference. Mrs. Martin is the director of the Tulsa City–County Library and was recently awarded an honorary degree by the University of Tulsa for her contribution to the cultural enrichment of her city. Mrs. Martin is a former president of the Oklahoma Library Association, the Arkansas Library Association, and the Southwestern Library Association. She has been an active and tireless ALA member in many capacities, including chairperson of the Membership Committee, member of Council, and of the Executive Board. She is a congressional appointee to the Advisory Committee to the White House Conference on Library and Information Services. Her Distinguished Service Award from the Oklahoma Library Association was also well earned.

Allie Beth Martin died on April 11, 1976, just a few months before she was to preside over ALA's Centennial Conference. The June 1976 issue of *American Libraries* was dedicated to her, and at the conference she was named, posthumously, an Honorary Member, the association's highest honor "in recognition of her many contributions to the advancement of the library profession and in appreciation for her leadership during its centennial year." Mrs. Martin was 61 at the time of her death.

The list of past presidents of the Oklahoma Library Association and the names of librarians who have received the Distinguished Service Award comprises the "who's who" in library service in Oklahoma. Many others have played vital roles in library development in this young state, and much still remains to be accomplished to bring the visions of these librarians to reality.

REFERENCES

1. Grace T. Stevenson, *Southwestern Library Association Project Report: ALA Chapter Relationships—National, Regional, and State*, American Library Association, Chicago, 1971.
2. "Constitution and By-Laws, Oklahoma Library Association," *Oklahoma Lib.*, **23**, 26–33 (July 1973).
3. Oklahoma Library Association, Intellectual Freedom Committee, "Censorship in Bartlesville," *ALA Bull.*, **45**, 87–90 (March 1951).
4. Frances Kennedy, "Censorship in Bartlesville," *Oklahoma Lib.*, **1**, 7 (Winter 1950–51).
5. Frances Kennedy, "Past Presidents Fund," *Oklahoma Lib.*, **22**, 18–20 (July 1972).

BIBLIOGRAPHY

Oklahoma Librarian, Vol. 1–, 1950–.

Oklahoma Library Commission, *Oklahoma Libraries, 1900–1937*, Oklahoma Library Commission, Oklahoma City, 1937.

FRANCES KENNEDY

OKLAHOMA. UNIVERSITY OF OKLAHOMA SCHOOL OF LIBRARY SCIENCE

The School of Library Science at the University of Oklahoma was formally established in 1929, but the seeds for it were planted almost 10 years earlier. In 1919, in order to satisfy the needs of the people in the state, the Oklahoma Legislature created the Oklahoma Library Commission and authorized it to give advice to existing libraries that served the public and to aid in establishing new libraries, especially in rural areas. The broad task of the commission was to improve library service to the people of Oklahoma. As soon as the members of the commission were appointed by the governor, they were deluged with calls from all parts of the state for trained librarians. To meet the demand for trained librarians, it was necessary either to bring in people from other states or to send Oklahomans out of the state for comprehensive library training. Neither of these solutions was considered practical or financially desirable. Fortunately the State of Oklahoma had a nucleus of professional librarians who were determined to solve the problem within the state. In this group was Jesse Lee Rader, director of the library at the University of Oklahoma. In the summer of 1920, in addition to his full-time duties at the university, he designed and—with a faculty consisting of himself, Miss Vera Dixon, and Miss Grace Herrick—presented to five students a small experimental program for the training of librarians. The curriculum included 12 hours a week of Cataloging, 12 hours of Classification, 6 hours of Reference, 2 hours of Order and Accession, and 2 hours of Administration. Each student was required to take all courses, and for these 34 hours of classes per week received 6 hours of credit. This program, given on the university campus, did not lead to a degree, but it is regarded by many as the real beginning of the School of Library Science, which now not only serves the students of Oklahoma, but attracts students from all areas of the United States and from many foreign countries.

This small summer program received some financial assistance from the Oklahoma Library Commission and continued to exist and to grow for 13 years, with a maximum of dedication and a minimum of financial backing. In 1929 it finally was recognized as performing an essential service to the state, and the School of Library Science was formally established in the College of Arts and Sciences at the University of Oklahoma in Norman, Oklahoma. It thus became the 17th of the now 55 accredited library schools in the country. Mr. Rader was appointed to serve as its director while continuing his duties as director of the University Library. In 1930 the school received its provisional accreditation as a "senior undergraduate library school," and within 2 years full accreditation was given. In 1932 the summer program was expanded into a year-round program with emphasis on training librarians for small public libraries.

Between 1932 and 1952 the curriculum leading to a Bachelor of Arts in Library Science at the University of Oklahoma was a structured program requiring 30 credit hours of specified courses in Library Science, which served to fulfill the requirements of a major in the degree program of the College of Arts and Sciences.

Changes were made in 1937, 1941, and 1948 involving course content and the introduction of elective courses. In 1948, 10 of the 30 credit hours were firmly established as elective courses. At this time further recognition was given to the school when courses in the Library School were recognized by the university's College of Education, and candidates for a master's degree in education were permitted to select library science as a minor.

In 1951, after 42 years of service to the university and the state, Mr. Rader retired from both of his directorships. The University Library and the School of Library Science were most fortunate in being able to attract Dr. Arthur M. McAnally to these positions. Dr. McAnally had held a number of library positions including administrative posts and was one of the few professional librarians in the country to hold a Doctor of Philosophy in Library Science from the University of Chicago. His reputation was of sufficient importance that the administration gave him the rank and responsibilities of a dean, if not the actual title.

Dr. McAnally was cognizant of the rising master's degree programs in library schools throughout the United States, and he urged that the school be reorganized to bring it into line with the needs of the times and the profession. He wanted to retain a strong bachelor's degree curriculum, but deemed it necessary for the school to develop a good master's degree program. Under his leadership the faculty expanded the curriculum to encompass both degree programs. This curriculum was submitted to the university authorities, and in 1953 the proposals were approved and students could now go beyond the bachelor's degree and obtain either a Master of Library Science (with a no-thesis program) or a Master of Arts in Library Science (with a thesis program). Dr. McAnally also instituted an aggressive student recruitment policy and established procedures for locating jobs for graduates of the library school. His vigorous leadership guided the school's graduate program to full accreditation from the American Library Association in 1956. As of July 1, 1976 it was the only accredited library school in the State of Oklahoma. Dr. McAnally not only encouraged his faculty and staff to participate in professional organizations and to engage in research and publication in all areas of library science, but he himself led the way.

Both Professors Rader and McAnally had urged that the University Library and the School of Library Science each needed its own full-time director, but their efforts did not succeed until 1959 when Mr. Gerald Coble was appointed director of the School of Library Science. Although Dr. McAnally was increasingly busy with his rapidly growing library, he maintained an active interest in the Library School and continued to teach a course in academic libraries each spring until his untimely death in 1972.

Professor Coble was already familiar with the structure and functioning of the Library School, since he had served as a part-time faculty member for several years while he held the position of assistant director of libraries in charge of Readers Services at the university. Continuing the efforts begun by Dr. McAnally, Professor Coble continued a reassessment of the curriculum and suggested that some courses be renovated, others dropped, and that new courses be developed in the rapidly rising fields of documentation and machine literature searching.

Professor Coble remained with the school for 5 years and was followed by Dr. Frank J. Bertalan after an interim period of 1 year during which Mr. Melville Spence was acting director. Dr. Bertalan came to the school from Washington, D.C., where he had worked at the Library of Congress, earned his Ph.D. at Catholic University of America and, immediately prior to coming to Oklahoma, had been in the Office of Emergency Planning, Executive Office of the President. Dr. Bertalan resigned in August 1974 and Dr. Frances Laverne Carroll, who had joined the school's faculty in 1962 (see below), served as acting director in 1974–75. In 1975 Dr. James S. Healey was appointed director, beginning his service in August of that year. Dr. Healey has a Doctor of Library Service degree from Columbia University, an in-depth knowledge of public libraries based on administrative experience at city and state levels, and several years of teaching experience at the University of Rhode Island Graduate Library School.

A serious problem in this library school, as well as many other library schools throughout the country, was the fact that the full-time faculty was too small and too frequently undergoing change. To solve this problem, a strong and determined effort was begun in 1962 to develop and hold an adequate number of qualified faculty. Many outstanding librarians were available for part-time teaching, but a permanent and cohesive faculty was needed so that the school could develop long-range plans and keep abreast of progress in the art of librarianship.

The first step in the faculty-building program was to persuade Professor Irma Tomberlin to return to full-time teaching in the Library School (she had been a member of the faculty from 1957 to 1960) and to urge her to use her special skills and knowledge to develop needed courses. This she did and continued to do until the size of the faculty made it possible for each member to focus on areas of special interest and training, which then permitted her to concentrate on special libraries, government documents, and advanced cataloging. Also in 1962, Professor Frances Laverne Carroll joined the faculty and brought to the school experience and knowledge in child and young adult literatures as well as a broad background in public school librarianship. To these specialties she has since added research in international librarianship. Between 1964 and 1969 others joined this small but important nucleus. Professor Ruth David came in 1964, first as reviser and laboratory instructor, and later as a teacher in cataloging, reference, and library service to the disadvantaged. Professor J. Michael Bruno joined the faculty in 1965 after serving as acquisition librarian for the University Library and brought experience as a dealer in rare books and manuscripts and an alert interest in problems of censorship, together with knowledge of automation and data processing. In 1967 Instructor Dell Hewey started as cataloging-laboratory instructor and, while working on an advanced degree, developed a special interest in information systems and networks and in library data banks. In 1968 and 1969, Dr. Howard Clayton and Dr. Harry Clark, respectively, came to the school. Professor Clayton's primary interest is in the use of the library as the major instrument of education, and he is editor of the journal *Learning Today* and its supplements, *The Omnibus*, and *The Experimenter*. Professor Clark has specialized in the history of books and printing, bibliography, and research methods. The following institutions are represented by the faculty: University of California at Berkeley, University of Denver, Kansas State Teacher's College at Emporia, Louisiana State University, Syracuse University, and the University of Oklahoma. In 1965 only the director of the school possessed a doctorate, now four of the eight full-time faculty have this degree.

The seven persons listed in the preceding paragraph, together with the director of the school, now constitute the basic full-time faculty. In addition, the school continues to be fortunate in being able to draw on the talents of outstanding professional librarians within the area who are willing to teach part time. Among these are Professor Leonard Eddy, director of the Health Sciences Center Library in Oklahoma City; Professor Allie Beth Martin, director of the Tulsa County Library System and 1975/76 president of the American Library Association (died April 1976); Professor William Lowry, director of the Pioneer Multi-County Library System; Professor James Zink, director of libraries at the University of Oklahoma; and others on the staff of the University Library and throughout the state. Through seminars, workshops, institutes, and extension courses, these people have added to the areas of expertise and to the variety of viewpoints available to the students.

From 1956 through 1971, every student aspiring to a master's degree had been required to have 12 hours of undergraduate credit in library science and to take 32 hours of course work (30 in the thesis program) at the graduate level; 15 of the 32 hours were in prescribed courses, and a minimum of 4 hours in graduate courses outside the field of library science was mandatory. Obviously, this curriculum left little room to accommodate differences in educational background, in work experience, or in individual interests.

In the late 1960s, during the tenure of Dr. Bertalan as director, there was a growing recognition among the faculty that the program of the school needed reevaluation and revision, and that a piecemeal approach would not suffice to accomplish this. In 1970, therefore, Dr. Bertalan appointed a permanent Curriculum Committee on which both faculty and students were represented. The first task of this committee was to develop a statement of goals and objectives for the school; the second, to examine all courses in the light of this statement. The committee, with assistance from other faculty and students, set to work upon these tasks and the total effort resulted in a new program that was put into effect in 1972.

The new program was based on an examination of the needs of the library profession throughout the nation, on the needs of the profession within the State of Oklahoma, and on consideration of developments taking place in other library schools. It had become apparent that library schools were not showing as much flexibility as were libraries themselves, or as colleges were in their undergraduate curricula, and that training for librarianship needed to take into account differences in educational background, experience in library work, and individual interests of entering students.

It was agreed that the time had come to restrict the library school program to the graduate level, to eliminate undergraduate courses and requirements, and to establish as a primary prerequisite for admission to the program that the candidate possess a bachelor's degree. The area of undergraduate concentration, it was realized, need not be limited to the humanities—valuable though these continue to be—but degrees in other areas were to be given equal recognition because of the need of the profession for persons with backgrounds in an increasing variety of subjects.

The new program requires 36 hours of graduate-credit courses (34 in the thesis program), but only two courses, for a total of 7 hours, are prescribed; these deal with the fundamental concepts of cataloging and reference. A reading knowledge of at least one foreign language is considered essential for students interested in academic libraries; but, for other types of libraries, statistics or computer science or educational media may be substituted for this requirement. Beyond this, each student—in consultation with a faculty advisor—plans the rest of the program to fit his or her particular needs and interests. Courses outside library science may or may not be included, at the option of the student, but no more than 9 hours of such courses (6 hours in the thesis program) may be applied toward the degree. Students may build a program around a particular type of library or they may select courses which encompass all types of libraries. Colloquia, workshops, special lectures, and meetings are scheduled to enrich the program and to enhance the student's total concept of librarianship.

The administrative structure of the school features joint faculty and student committees so that a constant exchange of ideas on the needs of the school can be facilitated. The student body may set up its own committees through its organization ALSO (Association of Library Students at Oklahoma), which was established in 1970. Through ALSO the students can plan and execute their own projects and elect two voting representatives to the school's faculty meetings. Change is sometimes initiated by the students; for example, a request from them stimulated a practicum feasibility study in 1972 and 1973. This study, and planning by both faculty and students, resulted in an experimental elective course which permits a small number of students who have never worked in a library to do so for one semester under the supervision of a professional librarian. The type of library experience available may vary depending on the libraries within the area that are willing to participate in this program and on the availability of qualified professional librarians who are willing to plan and supervise activities that are acceptable to the faculty of the Library School.

The school continues to cooperate with the College of Education in planning programs that will meet the state requirements for certification for public school librarians. Programs for the provisional and standard certificates have been approved by the Oklahoma State Department of Education for many years. In 1974 a new certificate, the professional certificate, was designed and approved and is obtainable in this state only at the School of Library Science at the University of Oklahoma. This certificate is given only to students who have had successful work experience in school libraries, possess a standard school library certificate, and have completed a M.L.S. degree. This certificate is specifically aimed at providing qualified media generalists to aid in the development of system-wide media services in public schools. Students are permitted to work toward the professional certificate and the master's degree in library science simultaneously. For this and other reasons, the Oklahoma University School of Library Science program is considered a step in the direction of raising state standards for school libraries and school librarians.

The University of Oklahoma School of Library Science was the 13th library school in the U.S. to offer a course in medical librarianship. This course is given at the Health Sciences Center in Oklahoma City under the direction of Professor Leonard Eddy, a certified medical librarian. It was first offered in 1967, approved in 1968 and in 1972 by the Medical Library Association. Discussions are currently under way toward developing a sequence of courses in this specialized area.

In 1972 the School of Library Science was removed from the College of Arts and Sciences and placed administratively directly under the provost of the university, with collateral responsibility to the dean of the Graduate College. This administrative change was reversed in August 1976 and the School of Library Science was returned to the College of Arts and Sciences.

Although the School of Library Science does not yet have its own doctoral program, the school, in collaboration with the School of Industrial Engineering, pioneered a doctoral program in library management in 1969 on the Norman campus. Planning has begun on other collaborative graduate programs since the university's Graduate College announced that it would accept, pending approval by the regents of the university, interdisciplinary doctoral programs provided that each would be under the auspices of a current degree-granting college. This ruling will permit librarians to obtain a doctorate in various subject fields with library science as an equal partner in the curriculum.

Between June 1956 and May 1975 the School of Library Science at the University of Oklahoma granted over 1,100 master's degrees and the student job record shows that, although the greatest number of graduates are employed within the state of Oklahoma, the other 49 states are represented, as well as Australia, Bolivia, Canada, China, Germany, Guam, Hong Kong, India, Indonesia, Iraq, Korea, Malaysia, Nicaragua, Panama, Sweden, Turkey, and the Virgin Islands. Its graduates have found work in all types of libraries and at various levels from the beginning professional positions up through heads of departments; some are now directors of libraries and/or library schools. Three of the school's graduates were winners of the Beta Phi Mu International Award: Alfreda H. Wiester in 1960, Rita Lee Lucas in 1961, and Raymond Y. Yamachika in 1962.

The School of Library Science has been the recipient of federal funds, and it was estimated by Dr. Bertalan in 1972 that the school had been granted over one-half million dollars for various programs and institutes conducted since 1965. The school has frequently received scholarship money from the Oklahoma Library Association and from the Lambda Chapter of Beta Phi Mu; in 1975 the school was awarded its fifth H. W. Wilson Scholarship.

In consonance with the goals and objectives of the school, programs in continuing education have been designed to serve the library profession in Oklahoma and have been most successful in drawing participants not only from the state but from all parts of the United States. Institutes, short courses, and intersession courses were once scheduled only in the summers, but are now being offered whenever possible throughout the year.

Students are encouraged to enter the School of Library Science either in the fall or the summer so that they may take the required beginning sequence of courses which are not scheduled in the spring semester. For those who can attend only summer sessions, it is possible to plan a full program that may be completed in four summers. All courses and programs will be under continuous scrutiny to make sure that the following stated goals and objectives are met at all times:

> The goals of the School of Library Science are to provide professional education for persons wishing to prepare for a career in librarianship, to strengthen all types of library service by cooperating with librarians, educators and others in the presentation of colloquia and workshops, to encourage engagement in research for advancement of knowledge in the profession, and to contribute to the advancement of library science through participation in other professional activities.
>
> Professional education should enable students to gain ability in organizing and retrieving information in whatever form it may be recorded, in perceiving and dealing with problems of library administration, and in initiating research. Professional education should foster an appreciation of the role of libraries in civilization, an understanding of the purposes and methodologies of library usage, and a commitment to freedom of access to all information.
>
> The presentation of colloquia and workshops provides current awareness service to practicing librarians and is vital to the dissemination of ideas in a growing profession. The graduate school is the appropriate agency to assume responsibility for this form of continuing education.
>
> A profession can only advance in recognition as it develops knowledge and theory based on research. The graduate school must lead in the examination and analysis necessary to formulate problems and attempt their solution.
>
> By encouraging faculty and students to participate in such activities as professional meetings and conferences sponsored by other libraries and educational institutions, the school may contribute to the exchange of ideas which is vital to the advancement of library science.

BIBLIOGRAPHY

Bertalan, Frank J., and Jay Mumma, "The School of Library Science at the University of Oklahoma," *Lib. Binder*, **18**, 20–25 (December 1970).

Carroll, Frances Laverne, "Education for School Librarianship," *Oklahoma Teacher*, **54**, 25 (April 1973).

Donnell, Janice, "The History of the School of Library Science of the University of Oklahoma, 1929–1960," *Oklahoma Lib.*, **14**, 15–23 (January 1964).

Donnell, Janice, "The History of the School of Library Science of the University of Oklahoma. 1929–1960," 1963 (typewritten); Selected Bibliography: pp. 43–44. Can be obtained through the School of Library Science, University of Oklahoma.

Oklahoma Library Commission, *Summarized Report by the Secretary, Mrs. J. R. Dale*, Oklahoma City, Warden Co., 1922 (Document No. 158191).

Tomberlin, Irma, "Graduate Education for Librarianship at the University of Oklahoma," *Oklahoma Lib.*, **23**, 8–9 (April 1973).

RUTH DAVID

OMNIBUS BOOKS

The "omnibus book" is not easy of definition; consequently, its precise history cannot be charted with certainty. Initially, little more can be understood apart from the fact that it is a collection which is comprised within a single volume. The omnibus book can be most clearly perceived through the circumstances which gave it birth and which fostered its growth.

In times of economic difficulty, books are always among the products which are soon affected adversely. Yet, at the same time, readers lose none of their reading interests—which may indeed be increased by additional leisure and the restriction of other costly pursuits. It is at such times that the book trade has adapted itself to some kind of inexpensive book production. It was out of such circumstances that the omnibus book grew.

In January 1933 the Book Clinic held a meeting in New York to discuss the production of omnibus books. At that meeting Stanley Morison, the typographer and printer, tied the rise of the omnibus book to the economic depression. In his view, the Depression "began in England fifteen years ago and in my humble opinion we shall not see the end of it in my time on this perishing planet." He said that in England at that time the masses did not buy books unless they were bargains. The most popular authors were being read from circulating libraries and were being bought only when they appeared in omnibus form.

The publishing year of 1932 produced approximately 150 omnibus books in England, while the American spring lists of 1933 offered only about 18 and never grew to enormous proportions. It was a phenomenon which was commented on by the *Times Literary Supplement* (London) in a column entitled "By Omnibus" in the issue of November 24, 1933:

> In a mechanical age, and an age, too, in which the followers of the Muses are more numerous and more various than they have ever been, it is not to be wondered at that a traffic problem should have arisen on Parnassus. This year for the first time Mr. Hugh Walpole and Miss Clemence Dane, who often already have toiled up the slopes with acceptable (but single) offerings, are among the throng of clients who essay the new form of transport.

The depression period of the 1930s was the great time of flowering of the omnibus book. The popular book was, naturally, the chief type of literature to be published in this form. A glance over the lists of published titles indicates a high percentage of detective, adventure, humor, and romance, reading which was consonant with the atmosphere and the problems of the time. In certain series, for example, in the omnibus books published in the Modern Library, other tranquilizing staples such as Jane Austen made an appearance. Everything about the books gave evidence of the publishers' intentions of reaching a wide audience of impoverished readers (and which readers, as distinct from collectors, are not impoverished?) with established general fare. Few of them had any pretensions to be regarded as examples of good, as distinct from adequate, book making, but in the wake of the great period of the omnibus book, two other developments occurred which owed something to these origins.

In the late 1930s the Nonesuch Press began the publication of their "Nonesuch Library," described as "compendious editions of the English classics." These follow the omnibus books in compressing into one convenient volume a major selection of the writings of one author. Allied to the Nonesuch tradition of good book making, the early titles—before war-time economy standards prevailed—are among the best examples of good, compact book presentation. The first printing of the works of Lewis Carroll is a particularly good example.

The second consequence was that the experience gained in producing omnibus volumes gave publishers experience in producing a large book at a commercially competitive price. It would be absurd to suggest that this would not have happened without the omnibus book, but the omnibus can legitimately be regarded as a precursor. Allen and Unwin's publication of Launcelot Hogben's *Mathematics for the Million* is an example.

In defiance of Dr. Johnson's dictate that the best books are those that can be held in the hand and carried to the fireside, a big book can summon an imposing following. It is not solely due to economic pressures. Many readers find satisfaction in the handling of a large book, even on occasions, a heavy book. Other readers have enjoyed the contemplation of hours of reading uninterrupted by any unnecessary movement from the armchair. I know of no greater tribute to this aspect of the omnibus book than a Christmas Day incident recorded in the biography of that fine scholar, George S. Gordon:

> His daughter Janet had given him that morning as a present the *Clubfoot Omnibus*. It was a monster Omnibus. After the morning service in the College Chapel he settled in a deep chair before his library fire with the book: he read steadily throughout the day. There was an interval in the evening when we had some guests to dinner: but the Omnibus was resumed after they left, and finished before he went to bed. He had had a perfect day.

ROY STOKES

ON-LINE INFORMATION SYSTEMS

The history of information retrieval systems falls into several periods that are fairly clearly defined. Before the 1940s the only information retrieval systems were of a purely manual type: indexes and catalogs in card and printed form. These retrieval devices are precoordinate and nonmanipulative. They rely on a linear (one-dimensional) organization and have very limited capabilities for search and retrieval. The 1940s brought the single most important development in the history of information retrieval, namely, the invention of retrieval systems that are post-coordinate and manipulative. These systems, still entirely or largely manual, were introduced by Batten and Cordonnier (the peek-a-boo, or optical coincidence, principle); by Mooers (edge-notched cards); and, somewhat later, by Taube (the Uniterm system). These early postcoordinate systems offered major advantages over their predecessors. They are the obvious forebears of modern computer-based systems. In fact, the two basic forms of file organization used in modern information retrieval systems (term entry and item entry) were introduced in the 1940s by Batten and Mooers, respectively.

The 1950s brought early forms of mechanization of these principles by means of punched card data processing systems. The punched card systems of the 1950s were the immediate predecessors of the computer-based systems of the 1960s. The 1960s comprised the era of computer retrieval in an off-line, batch-processing, tape-oriented mode. Now, in the 1970s, we are in the era of on-line information retrieval systems.

These historical periods are not quite as clear-cut as the above discussion seems to imply. The first computer-based retrieval systems were introduced in the 1950s, and experimental work on on-line information retrieval dates back at least to 1963. Nevertheless, the major off-line systems emerged in the 1960s, and the widespread conversion to the on-line mode of operation is a development of the 1970s.

Off-line, batch-processing, computer-based systems offered significant advantages over their predecessors, including:

1. The ability to provide multiple access points conveniently and economically.
2. The ability to conduct many searches simultaneously.
3. The ability to generate printed output, including interfaces with devices for photocomposition and for computer-output-microfilm (COM).
4. The ability to offer multiple products or services (e.g., printed indexes, SDI, retrospective search) from a single intellectual input and a single clerical input.
5. The ability to monitor its own operation and to produce various types of management information.
6. The ability to conduct "complex" searches involving many terms in various logical combinations.
7. The ability to produce a data base in machine-readable form, on magnetic tape, that can easily be duplicated and shipped to other information centers, thus facilitating the development of networks and other cooperative ventures.

The last advantage is perhaps the most important of all. The rapid growth in the availability of machine-readable data bases, in the period 1965–1975, has had a major impact on the provision of information services in the United States and other countries. This development has been described elsewhere by Lancaster (*1*).

But, although the computer offered many advantages in information retrieval activities, the off-line, batch-processing systems also have associated disadvantages. They are essentially "one-chance" searching systems in which the searcher has to think in advance of all possible search approaches and to construct a search strategy that, when matched with the data base, is likely to retrieve all the relevant literature. Put somewhat differently, an off-line system is noninteractive and nonheuristic. Neither does it provide any true browsing capability.

A second major disadvantage of the off-line system is the fact that the search results are substantially delayed. It is not possible to get an immediate response from such a system. At best, the search results will be obtained in a matter of hours; at worst, in the case of searches processed by a large national information center, the delay may involve several days or perhaps weeks.

A third disadvantage is that the search in an off-line system will generally be a search of a delegated nature. That is, the individual who needs information must delegate the responsibility for preparing the searching strategy to some information specialist and has no opportunity to conduct his own search. Although nondelegated searching is not invariably better than delegated searching, the process of delegation is a tricky one. It is obvious that a search will produce very poor results if, in the process of delegation, the requester is unable to explain clearly what it is he is seeking or if the information specialist misinterprets the real needs of the user.

On-line retrieval systems have all the advantages that apply to computer-based systems in general, as listed earlier, but avoid all of these major disadvantages. On-line retrieval systems are heuristic and interactive; they permit browsing, can provide rapid response, and may be used in a nondelegated search mode.

Some Characteristics of On-Line Retrieval Systems

The term "on-line" refers to the fact that the searcher is in direct communication ("on-line to") the data base he wishes to interrogate and to the computer on which this data base is loaded. A search is conducted as a two-way conversation between the searcher and the system (computer). Each takes turns to communicate with the other. For this reason the on-line system is frequently referred to as *interactive* or *conversational*. The interaction between searcher and system is effected through some form of terminal connected to the computer through communications lines.

These terminals are of two principal types: typewriter terminals and video terminals. The interactive typewriter terminal closely resembles a conventional typewriter. The searcher uses the keyboard to communicate with the system and the system's response is also recorded on the paper output of the searcher's terminal. In the case of the video terminal the searcher also communicates by means of a keyboard. Both the searcher's messages and the system's messages are displayed on a viewing screen resembling that of a domestic television receiver. This viewing device is likely to be a conventional cathode ray tube (CRT) display. It may, however, be an alternative display device such as a plasma panel. For information retrieval purposes, it will be necessary to supplement a video terminal with an adjacent printing device capable of recording on paper anything displayed on the viewing screen.

The terminal communicates with the computer, and vice versa, by means of common communications lines. There are no real restrictions to this communication in terms of distance. A terminal may be in the same building as the computer facility, or in the same complex of buildings, or it may be several hundred or several thousand miles away. A terminal in the same building or building complex may be physically connected to the computer by cable, whereas a remote terminal will communicate via telephone lines or, possibly, via communications satellite. In this way, it is perfectly possible for an Australian scientist to make use of a data base loaded on a computer in the United States. A simple schematic of a computer communications network, capable of supporting an on-line retrieval system, is shown in Figure 1.

As well as being referred to as interactive (or conversational) and heuristic, an on-line system is frequently associated with the adjectives *time-shared* and *real-time*. *Time-sharing* merely means that the processing time of the computer is shared among several completely independent activities. On-line time-sharing implies the sharing of machine processing time among a number of terminals. More precisely,

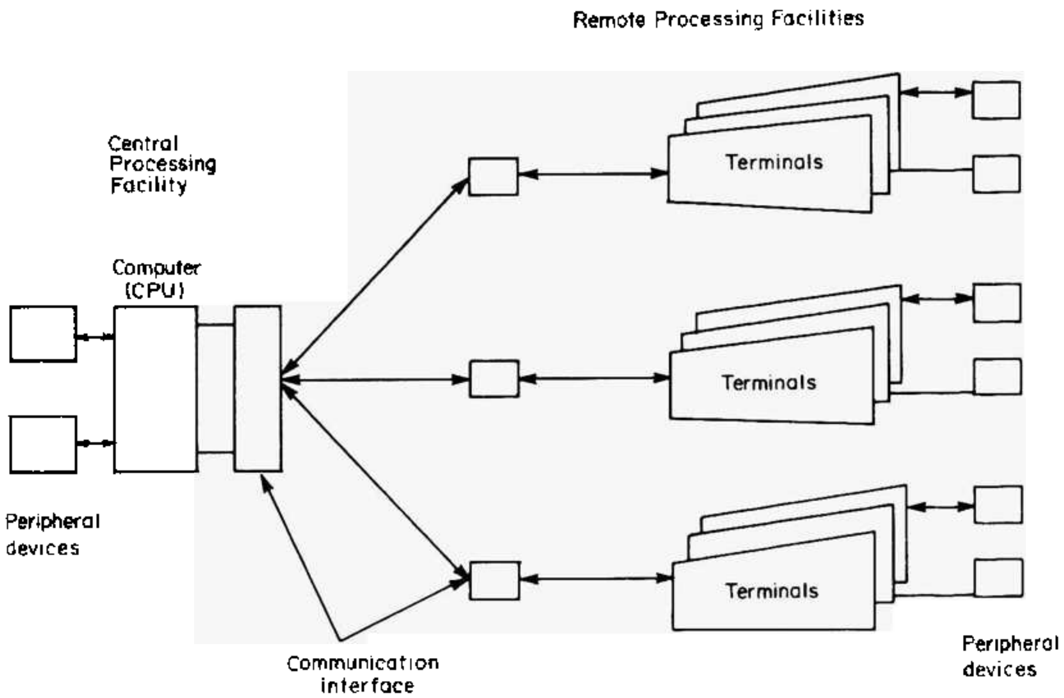


FIGURE 1. *Schematic representation of a computer communications network. Reproduced from Lancaster and Fayen* (Ref. 2) *by permission of John Wiley & Sons, Inc.*

an on-line, time-shared system will operate via a number of independent, concurrently usable terminals, giving each terminal user processing time when he needs it and creating the illusion (most of the time) that he is the sole user of the computer facilities. *Real-time* operation implies that the computer receives data, processes it, and returns results quickly enough for these to be utilized in some ongoing activity. Applied to information retrieval, real-time implies that the computer responds quickly enough to interact with a user's heuristic search processes. Most of the time a well-designed on-line system will respond to a query or command so rapidly (say 3 to 5 seconds) that its response may be regarded as almost immediate.

SEARCHING PROCEDURES

A search in an on-line retrieval system will normally involve four stages:

1. *Log-on procedures*, whereby the user calls the computer on which the needed data base is loaded, identifies himself as a legitimate user, and asks for access to a particular file.
2. *Search negotiation*, in which the user tries out various searching strategies, perhaps using various aids provided by the system itself.
3. *Result manipulation*, in which the user specifies how he would like the search results to be presented to him.
4. *Log-off procedures*.

In the on-line search the user will communicate when prompted to do so by the system. He will use both *index terms* and *commands*. The conversation that takes place between user and system is best illustrated by an example, as shown in Figure 2. In this hypothetical dialogue, the user knows that it is his turn to communicate when the system gives him a prompt in the form of SS (for "search statement"). Each of the user's search statements is also given a number by the system. The system's responses are preceded by the abbreviation PROG (for "program").

```
SS1:    PSORIASIS
PROG:   192
SS2:    SWEAT OR SWEAT GLANDS
        OR BODY TEMPERATURE REGULATION
        OR THERMOGRAPHY
PROG:   1,107
SS3:    1 AND 2
PROG:   45
SS4:    3 AND ENGLISH
PROG:   27
SS5:    4 AND 1974
PROG:   12
SS6:    "PRINT"
```

FIGURE 2. *Example of a search dialogue in a hypothetical retrieval system. Although this sample dialogue is typical of a number of on-line retrieval systems, it is modeled particularly on the ORBIT software of the System Development Corporation.*

The user is looking for documents discussing some relationship between psoriasis and body temperature regulation or perspiration. He first enters the term PSORIASIS and is told, within seconds, that there are 192 documents in the data base that satisfy this requirement (that is, have been indexed under the term PSORIASIS). The searcher next enters a string of terms that represent the second facet of his request. These are entered in an OR relationship; they are logical alternates in the search. That is, the presence of any one of these terms is sufficient to indicate the relevance of the document to the subject of body temperature regulation or perspiration. The system responds, again in seconds, that the data base contains 1,107 documents that satisfy this logical requirement. The searcher now asks that these two sets be combined; that is, he wants to know how many documents are in common between the "psoriasis" set and the "body temperature" set. The system indicates that there are 45 common documents, documents that presumably have something to do with the relationship between psoriasis and body temperature regulation. The searcher then restricts the search further by language and by subject, and finally asks for the 1974 items in English to be printed out at his terminal. This simple search, including printout of the citations for 12 items, is likely to have taken 5 minutes or less.

The search shown in Figure 2, while very simple, is quite typical of the way searches are normally conducted in on-line retrieval systems. It illustrates a number of important points, including the use of Boolean logic in searching; the capability for "set building" (the first two sets defined in the search are combined, by set number, to form a third set); and the capability of searching on elements, such as language and date, other than subject terms.

The system illustrated in this example will allow the searcher to enter one term at a time or to combine a whole string of terms (in AND or OR relationships) into a single search statement. Certain other systems, however, will only allow the searcher to enter one term at a time. He must later combine these into a single logical statement using AND, OR, and NOT or symbols for these logical operators (*, +, —, for example).

FILE STRUCTURE

The majority of on-line retrieval systems consist of three separate but closely related files, maintained on a disk or some other random-access storage device. These files, illustrated in Figure 3, are the index file, the inverted file of postings, and the unit record file. The index file is an alphabetical list of the searchable terms in the data base. Associated with each term, in this file, are two items of data: (*a*) the address on the disk where the "postings" for this term are stored, and (*b*) the number of postings associated with this term (i.e., a count representing the number of documents to which this particular index term has been assigned). The inverted file stores, for each term appearing in the index file, a list of all the document numbers to which this term applies (i.e., the list of numbers of all the documents to which this index term has been assigned). The third file, the

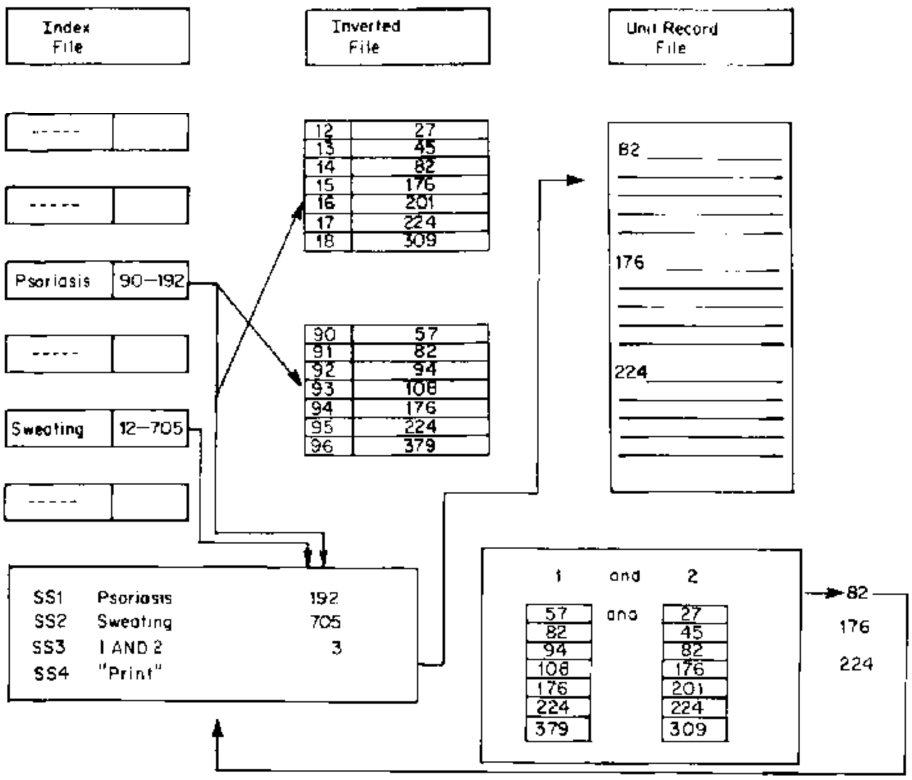


FIGURE 3. *File structure in a typical on-line retrieval system.*

unit record file (or *linear file*), is a file organized by document number. This file stores, for each document in the data base, various bibliographic data—at least a full bibliographic citation and possibly also an abstract and/or a list of all the index terms associated with this document.

We can now relate the file structure illustrated in Figure 3 to the type of search illustrated in Figure 2. When the searcher enters the term PSORIASIS (see insert in Figure 3), the system checks the *index file* and is able to inform the searcher, in perhaps 3 seconds, that 192 items satisfy his request. It responds similarly when the term SWEATING is introduced by the searcher. When the searcher asks that the two sets be combined, the system goes to the appropriate addresses for the two terms in the *inverted file*, reads the document numbers associated with these terms into core, compares the two lists, and recognizes that there are three common numbers in the two lists. It reports this fact back to the searcher. The searcher now decides that he wants to see these three items. He therefore enters the command "PRINT," which causes the records for these items to be retrieved from the unit record file and displayed at the searcher's terminal.

Although the schematic in Figure 3 is not representative of all on-line retrieval systems, it is representative of a great many systems of this type. A more complete discussion of file organization for on-line retrieval systems is given in a recent book by Lancaster and Fayen (*2*). The subject of file structures for on-line systems in general is discussed by Lefkovitz (*3*).

Some Further Features of On-Line Retrieval Systems

A rather complete description of the features of on-line retrieval systems is given in the book by Lancaster and Fayen (*2*) and, more concisely, in a report by Martin (*4*). Only some of the more major features can be mentioned here. The on-line system will usually have the capability of displaying its own controlled vocabulary. In response to a particular command followed by an index term, the system will display the terms alphabetically adjacent to this index term, along with the "postings" for each term. The system will produce this display even if the term entered by the searcher does not exist in the system. In this case the system will display the terms that are closest alphabetically to the term entered, but the term entered will have no postings against it. If the vocabulary of the system exists in systematic form, it will be capable of being displayed in this form. That is, the searcher can request that, for any term entered, the hierarchy in which it appears will be displayed. The terms related to the entered term by means of cross-references may also by displayed. In many systems each line in a vocabulary display (alphabetic or systematic) is given a line number whereby the user can incorporate a term into his strategy. That is, he may use the identifying number of the term rather than having to enter the full term itself at the keyboard. In some systems the user may incorporate a complete hierarchy of terms into his strategy by means of a single command.

The user of an on-line system is also likely to have a number of options available to him at the result manipulation stage. By varying the "print" commands he may request that records of varying length (e.g., bibliographic citation only, citation plus index terms, citation plus abstract) be displayed. In some systems he may specify which parts of the record are to be displayed and in what sequence. Almost certainly he will have an "off-line print" capability. That is, he may request that the entire set of records satisfying his search statement be printed off-line and mailed to him.

We have so far assumed a system based on human indexing of documents by means of some type of controlled vocabulary (e.g., a thesaurus). It is also possible to operate an on-line system in a natural language mode. In this case the complete text of a document collection is stored in digital form or, alternatively, the text of abstracts may be stored. Inverted files are built for all the words appearing in the text, except that a "stop list" is applied to avoid the creation of inverted files on prepositions, conjunctions, articles, and other nonsubstantive words. There is only one major difference between an inverted file built for a controlled vocabulary system and an inverted file built for a natural language system. In the former the inverted files record only document numbers. In the latter, however, they record document number plus an indicator of the exact position of the word in the text (e.g., paragraph number, line number, word position in the line).

Searching on-line in a natural language system is very similar to searching in a controlled vocabulary system, as illustrated in Figure 2, except that additional searching features are likely to be available. One important feature is that of truncation. A user may enter a word root (i.e., prefix) and request that all words beginning with that root be included in the search. Thus, the strategy SURG****** will retrieve such words as SURGERY, SURGICAL, SURGEON, SURGEONS, and SURGICALLY. The asterisks in this example indicate that the searcher does not care what characters appear in the positions so designated. Truncation of this type may also be used in controlled vocabulary systems. The device is more prevalent, however, in the natural language situation.

A second searching device common in natural language systems is that of word proximity. A searcher may specify how close two (or more) words are to appear in text before they are to be considered "related." For example, the statement READING (W5) EPILEPSY may indicate that the word READING must be separated from the word EPILEPSY by no more than five intervening words. Word proximity may be expressed, as in this example, in terms of physical distance in text or on the basis of linguistic unit (e.g., same sentence, same paragraph).

Some History

The first significant experiments in on-line information retrieval appear to be those conducted by Kessler at MIT around 1964. Kessler's experimental system in physics, known as TIP, was notable for several reasons. Not only was it the first important on-line system for bibliographic searching, but it also incorporated some "unconventional" approaches to searching. Searching could be conducted not only on keywords in titles of papers but also on the principles of citation indexing and bibliographic coupling.

The first large-scale, on-line, retrieval system was the RECON (Remote Console) system of the National Aeronautics and Space Administration (NASA). Experiments with the system began in 1965 but the system only became fully operational in 1969. RECON was designed for NASA by Lockheed Missiles and Space Company and equivalent software is commercially available from Lockheed as DIALOG. RECON is now an international system; the NASA data base is available for on-line search in Europe through the European Space Agency.

Another important set of search programs is known as ORBIT, commercially available from the System Development Corporation. The ORBIT software is used in the MEDLINE (MEDLARS On-Line) service offered by the National Library of Medicine. The MEDLINE service, initiated in 1971, is perhaps the largest on-line retrieval network now in existence in the United States, with over 200 users conducting in excess of 200,000 searches each year. The ORBIT software has also been adopted by the U.S. State Department and various other organizations.

The Data Central system, initiated in the 1960s, is designed for text searching (natural language) applications. It has been used with a number of important data bases, especially in the legal field. One important application is OBAR (Ohio Bar Automated Research), a legal retrieval system operated by the Ohio State Bar Association. LEXIS, a legal data base of national scope, also uses the Data

Central software. Hundreds of millions of characters of legal text are now available for on-line search through this software.

The New York Times Information Bank, the most important on-line system providing access to current awareness information, became operational in the early 1970s. It provides access to newspaper clippings, from *The Times* and other selected sources, for reporters in *The Times* building and to customers in remote locations up and down the country.

Other software for on-line searching is available from the Battelle Memorial Institute (BASIS) and IBM (STAIRS). Additional information on these systems can be obtained in the book by Lancaster and Fayen (*2*) and in the report by Martin (*4*). Several are discussed in their own right elsewhere in this encyclopedia.

A development that has had significant impact on the provision of on-line information service is the emergence of TYMNET, a time-shared data communications network operated by Tymshare Incorporated. TYMNET operates by means of leased voice-grade telephone lines. This network of leased lines, which now spans the country and extends to Canada and to Europe, is used to link computer facilities with each other and, more importantly, to give users of on-line terminals the ability to access a remote data base at communications rates that are considerably less than the rates that would be involved in the use of non-dedicated lines. TYMNET spreads its communications costs among its many institutional customers and these, in turn, pass their costs on to their own users. Many important bibliographic data bases, including MEDLINE, can now be accessed through this network. A more complete description of TYMNET appears in an article by Combs (*5*).

Another important development, occurring in the 1970s, has been the emergence of the on-line retailer of bibliographic services. An on-line retailer obtains a number of machine-readable data bases through licensing agreements, loads these on its own computer facilities, and sells access to some or all of these data bases to libraries, information centers, and other institutions. The major on-line retailers in 1975 are the System Development Corporation and Lockheed Information Systems, located in Santa Monica and Palo Alto, respectively. These organizations provide access to a wide range of important data bases, including those of the Chemical Abstracts Service (CHEMCON), Engineering Index (COMPENDEX), the National Technical Information Service, the Science Citation Index, ERIC (the Educational Resources Information Center), and CAIN (the machine-readable data base of the National Agricultural Library).

Other Applications of On-Line Systems

On-line systems are now being used for the input of bibliographic records as well as for the searching of these records. On-line indexing is now becoming a relatively routine operation. An excellent example of on-line indexing exists in a system established by the State Department. The most important on-line cataloging venture is that of the Ohio College Library Center (OCLC). The OCLC network, now national in scope, is a cooperative cataloging enterprise based on the MARC (Machine Readable Cataloging) tapes of the Library of Congress. The OCLC network provides cataloging data to member libraries and accepts cataloging from these libraries for items not already in the data base. The system provides sets of printed catalog cards for use by its members and also serves an on-line union catalog function. Additional activities, including application to acquisitions, circulation control, subject searching, and interlibrary loan, are planned for the future.

Another on-line network for cooperative cataloging is BIBNET, an operation of Information Dynamics Corporation. Through CATLINE, the National Library of Medicine makes its catalog of monographs available for searching and provides cataloging data on monographs to biomedical libraries.

An example of an on-line union catalog is SERLINE, another service of the National Library of Medicine. SERLINE will show which of over 100 medical libraries in the United States hold which of about 6,000 biomedical serials.

On-line systems can also be used for SDI purposes (Selective Dissemination of Information). A user may develop his SDI profile at an on-line terminal, store it in the system, and visit the terminal periodically (say monthly) to discover what has been added to the data base that matches his profile, since last he used the system. An example of this type of system is SDILINE, a further service provided by the National Library of Medicine. In the intelligence community, on-line systems are being used to disseminate messages transmitted to intelligence agencies in digital form. A completely paperless dissemination operation can be achieved by transmitting daily "mail" to user terminals.

Some on-line systems have been designed specifically to allow scientists and other professionals to build their own information files, to index them, to query them, and to print from them. Examples of such systems include RIQS at Northwestern University, AUTONOTE at the University of Michigan, and the SHOEBOX system developed by the Mitre Corporation.

There has also been a considerable amount of experimentation with the interfacing of on-line bibliographic searching systems with microfiche systems for document delivery. In a system of this type, the terminal user may interrogate an indexed file of bibliographic records and, once he has identified some documents of possible relevance, request that microfiche images of these documents be retrieved from a remote store and transmitted to his viewing station. Such a system exists as part of The New York Times Information Bank, and important experimental work in this area was done in Project Intrex at MIT.

The Future

As of 1975 on-line systems began to be used fairly routinely in the provision of information services. As an example, MEDLINE is being used by reference librarians on a regular basis in biomedical libraries in the United States. The MEDLINE terminal is a logical extension of the printed indexes and other manual tools traditionally used in reference services in libraries. An increasing number of academic and special libraries now have terminals that give them access to one or more remote data bases. Even some public libraries were, in 1975, experimenting with the provision of information services through on-line terminals.

It is clear that this pattern is likely to continue. More and more data bases will become accessible on-line and more and more libraries will be making use of them. It seems likely that libraries of the future will make extensive use of machine-readable data bases in the provision of information services. Many of these data bases will be physically far removed from the libraries using them, possibly located on computers in other countries. The cost of on-line searching will continue to decline as both communications costs and digital storage costs are reduced.

But there are many problems that must still be tackled. The librarian of the near future will be faced with an *embarras de richesses* in the on-line systems that will be available to him. Unfortunately, these systems present a great diversity in controlled vocabularies and in searching languages. The user of on-line systems must now learn the details of several different controlled vocabularies and, possibly, several different languages of interrogation. One possible solution to these problems is the development of common switching languages that can be used to convert the vocabulary and/or commands of one system into equivalent vocabulary and/or commands of a second system. Some experimentation in the area of vocabulary convertibility has been conducted in the last 5 to 6 years, the approach being that of the "intermediate lexicon," a switching language to which many other vocabularies can be mapped. The problems of converting from one set of commands to another are at present being investigated by the Electronic Systems Laboratory at MIT.

Another problem, which will become more critical with the passage of time, is caused by the proliferation of machine-readable data bases available on-line. It is becoming increasingly difficult to determine which machine-readable data base is likely to be most relevant to some particular search topic. At some future time we are likely to need an on-line "search tester," a data base that is an index to the contents of other data bases. The on-line user will first query the on-line search tester and this will present to the searcher, in ranked order, a list of data bases that are likely to be most productive.

Finally, we have the problem of document delivery. On-line retrieval systems have created an unfortunate anomaly in information service: We can identify relevant citations in searches of vast bibliographic data bases in a matter of a few minutes, but we may still have to wait days or weeks to obtain the needed reports or journal articles through interlibrary loan procedures. The rapid technological advances in bibliographic searching have unfortunately not been matched by comparable advances in the document delivery system. We now await the technological breakthroughs that will allow the economical transmission of microimages or digital text from a central store to remote user stations efficiently and cheaply. Such transmission is technologically feasible now, but it is still economically unattractive for most applications. This situation will undoubtedly change.

REFERENCES

1. F. W. Lancaster, "The Information Services Librarian," *Australian Special Lib. News*, 7(6), 139–149 (November 1974).
2. F. W. Lancaster and E. G. Fayen, *Information Retrieval On-Line*, Melville Publishing Co., Los Angeles, 1973.
3. D. Lefkovitz, *File Structures for On-Line Systems*, Spartan Books, New York, 1969.
4. T. H. Martin, *A Feature Analysis of Interactive Retrieval Systems*, Stanford University, Institute for Communication Research, Stanford, Calif., 1974.
5. W. Combs, "TYMNET: A Distributed Network," *Datamation*, July 1973, pp. 40–43.

F. W. LANCASTER

ONTARIO LIBRARY ASSOCIATION

In June 1900 the American Library Association held the first of several annual conferences in Canada, in the City of Montreal. The Canadians attending that conference were impressed with its value and by the organization behind the conference. Nine then met informally in the office of the librarian of McGill University, Mr. C. H. Gould, where it was decided to form "The Canadian Library Association," and a committee was struck to devise an organization.

In October of that year this committee assembled in the offices of the Toronto Public Library where the problems of forming a national library association were reviewed. It was felt the difficulties involved in establishing a national organization at that time were too great, and it would be more practical to first organize a provincial organization. Accordingly, provisional officers were chosen, a draft constitution drawn up, and Easter Monday, 1901, approved as the date of the new association's first meeting.

The objectives of the Ontario Library Association (OLA) adopted at the inaugural meeting are still valid today. These include such objectives as:

> to promote the welfare of Libraries, by stimulating public interests . . . by securing any need of legislation, by furnishing such cooperative work as shall improve results or reduce expenses, by exchanging views . . . in convention or otherwise, and by advancing the common interests of Librarians, Trustees and Directors. . . .

At the inaugural meeting, the secretary, E. A. Hardy (who was to be the association's secretary for its first 25 years), suggested how these objectives could be carried out. The OLA would assist libraries in the following ways:

By providing a wide variety of booklists, especially on Canadian topics.
By telling libraries of new work methods.

By providing a rationale to classification, with a view to getting fiction out of a wide variety of locations and back into fiction.
To work on the training of librarians by a diversity of courses with the eventual goal of the certification of librarians.
To work on giving all libraries a working system to control government documents so they can be used by the public.
To investigate how many libraries should attempt to collect complete sets of provincial documents.

These suggestions and others have provided a focus for the association's activities since that founding conference. Over the years the activities of the annual conferences have had the continuous theme of how to improve the libraries in the province through the interlocking avenues of providing better-trained personnel and increased government grants.

For many years the OLA had close ties with the Department of Education. Public libraries in Ontario were administered by that department. Several of its early presidents were school principals and were impressed with the policy of certifying teachers. Many felt the certification of librarians would provide better-trained personnel, which in turn would upgrade library services to the public. Over the years approaches were made to the government on this matter. In 1943 a committee was struck to thoroughly investigate the whole idea of certification. The educational authorities were receptive and in 1946, 45 years after the idea was first broached, the province started a program of certifying librarians who were employed in public libraries. This lasted until 1970, when public libraries came under the jurisdiction of the Department of Colleges and Universities.

Over the years the association has met with governments and their commissions to express its views on a wide range of related topics. Thus, a brief was presented to the Royal Commission on Dominion-Provincial Relations in 1938 to again urge the establishment of a National Library. In 1945 the association presented a lengthy brief to the Ontario Royal Commission on Education urging the upgrading of libraries in such areas as finance, legislation, library organization in the province, personnel, and an improved provincial administrative organization. In 1950 the OLA supported the Canadian Library Association brief to the Royal Commission on National Development in the Arts, Letters and Sciences, which urged the establishment of a National Library. In the 1970s the association submitted briefs to the Ontario Royal Commission on Book Publishing and to the Ontario Select Committee on the Utilization of Educational Facilities.

As well as submitting briefs, members of the OLA also took a more active role. In 1957 Dr. W. S. Wallace, a former president, surveyed the Provincial Library Service, which was then a part of the Department of Education. Dr. Wallace made many worthwhile recommendations to improve the efficiency and capabilities of this department.

In 1957 the association established a committee to study the Public Libraries Act, with a view to enabling the formation of larger library units. From this flowed the Francis R. St. John report—*A Survey of Libraries in the Province of Ontario—1965*. This study was commissioned by the OLA and funded by the Department of Education.

As a result of the St. John report, a revised Public Libraries Act was passed by the government in 1966, implementing some of the recommendations of the report.

The Ontario Library Association took an active part in the forming of the Canadian Library Council, which in 1945 became the Canadian Library Association. This occurred just 45 years after the meeting which led to the founding of the Ontario association. In 1953 a group of professional librarians met, and 5 years later the Institute of Professional Librarians was formed. Members of the OLA were heavily involved in the founding of this organization of professional librarians, the first in Canada. For several years the institute had its annual meeting concurrent with the OLA.

The structure of the association has changed over the years. At first it operated without sections, divisions, or institutes. But librarians with special interests kept coming together at every conference. The first formal section of the OLA was not founded until 1934. This was the School and Intermediate Libraries Section, some of whose members had started to hold meetings in the early 1920s to discuss such topics as the stimulation of student reading. Eight other sections were founded over the years in response to the wishes of the membership. Some of these were: Clericals Section, County and Small Libraries, Circulation Libraries, Reference Workshop, Ontario Regional Group of Cataloguers (which was originally affiliated in 1927 with the Cataloging Section of the ALA—the only Canadian Region to do so), etc.

This number of sections, along with a multitude of committees, seemed to be cumbersome and unwieldy. So, in 1966 a committee was established to investigate the reorganization of the association. After 2 years of discussion and debates, a new organizational format was forged. The OLA now consists of four divisions—Trustees, College and University Librarians, School Librarians, and Regional and Public Librarians. Instead of committees, action groups were to be formed. These groups were to be appointed by the president to investigate a problem, make a report for Council's consideration, then be disbanded. However, some of these groups have tended to become standing committees to provide a longer term study of the topic under investigation.

Over the years the Ontario Library Association, through its divisions and sections, has issued a few publications such as *A Handbook for Trustees*. In 1962 the association started the *O.L.A. Newsletter*. In 1975 it was decided to create two magazines: one, a monthly entitled *Focus*, to provide the membership with news and notes of immediate concern; the other, called *Expression*, is to be a semi-annual publication with articles of current interest.

For 75 years the OLA has been attempting to implement the objectives set out in 1901, with some degree of success. It has been able to adapt itself to new conditions since its membership has seen a need for having an organization to focus their concerns about good library service in the province.

BIBLIOGRAPHY

Bowron, A. W., "Chronology of OLA Reorganization 1966–1969," *Ontario Lib. Rev.*, **54**(1), 19–23 (March 1970).

Hardy, E. A., "The Ontario Library Association: Forty Years, 1900–1940," *Ontario Lib. Rev.*, **25**(1), 9–13 (February 1941).

The Ontario Library Association: an Historical Sketch, 1900–1925, Univ. of Toronto Press, Toronto, 1926.

Ontario Library Association, "Ontario Library Association, the Second Quarter Century, 1926–1951," *Ontario Lib. Rev.*, **36**(2) Pt. II, 48 pp. (May 1952).

"Ontario Library Association, Summary of Proceedings—56 Annual Conference," *Ontario Lib. Rev.*, **42**(3), 9–172 (August 1958).

Wallace, W. Stewart, "The Ontario Library Association: 1901–1955," *Can. Lib. Assoc. Bull.*, **12**(2), 77–78 (October 1955).

P. K. MUTCHLER

ONTARIO UNIVERSITIES LIBRARY COOPERATIVE SYSTEM

The Council of Ontario Universities gave formal approval to its Board for Library Coordination's proposal for the Ontario Universities Library Cooperative System (OULCS) in April 1973. The guidelines for the system were provided by a joint meeting of the Council of Ontario Universities and the Ontario Committee on University Affairs. These guidelines are:

> That each University be prepared to commit itself to participate in an Ontario Universities Library System, the principal features of which would provide for the various libraries to be essentially self-sufficient in the provision of service for undergraduate use, and to be effectively interdependent in the provision of service for research and graduate use.
>
> That with such system development it would be anticipated there would be appropriate coordination and centralization of technical processes, that library automation would be introduced where appropriate, and that there would be appropriate centralized storage of less frequently used library materials.

The formation of OULCS was the culmination of 10 years of steady progress toward a formalized, working organization for library cooperation within the province. From the 1950s onward, unprecedented pressures to meet new situations were particularly noticeable in the university libraries. The universities faced diversification of the curriculum, increased enrollments, new buildings, the establishment of new universities, and the development of research undertakings. To support this change of pace, libraries were forced to collect information in a much wider range of subjects, to recruit specialists, and to establish basic collections for the new universities. Automated techniques applicable to libraries were investigated with a growing sense of enthusiasm by the university administration and a growing sense of caution by library administrators.

In the summer of 1963, the Honorable William G. Davis, then minister of education, announced the establishment of the Ontario New Universities Library Project (ONULP). The project was launched immediately, under the administration of Robert H. Blackburn, chief librarian of the University of Toronto, and was to continue until June 30, 1967. The goal of the project was to build a basic and identical collection of 35,000 volumes for three new universities: Trent University, Brock University, and the University of Guelph. Two satellite campuses of the University of Toronto, Scarborough and Erindale, were also included.

Under ONULP the University of Toronto expanded its staff and facilities to provide the machinery to select, purchase, index, catalog, and deliver the books to the five new participating institutions. This procedure was designed to avoid costly duplication which would have occurred if each new institution had set up a processing organization, each of which would have been similar to the others, to serve only its own clientele. In addition, the University of Toronto Library was able to process the books more rapidly than could a new and understaffed library in a new institution.

While the project provided a basic library collection for each of the new institutions, it was still necessary for each of the new libraries to purchase books for courses which were unique to the curriculum of its institution. Periodicals, serial publications, and out-of-print materials were also purchased by the individual libraries. It was hoped that ONULP would permit each library to build its own staff at a slower and more desirable rate, until it could take over the full responsibility for its activities at the end of the project in June 1967.

By the time ONULP terminated, each of the five new libraries had received:

1. A library collection of 34,603 titles in 44,500 volumes.
2. A computer-printed shelf list in card form covering the collection.
3. Twenty copies of the final cumulation of the author–title and subject catalogs in book form.
4. A set of magnetic tapes comprising:
   a. A master title record file on two tape reels. This file contains 39,295 title records arranged in LC call number order. Of these, 34,602 belong to the ONULP collection. The remaining 4,693 are records of titles purchased by Scarborough and Erindale Colleges independent of the project.
   b. An author–title authority file on one tape reel. This file contains all headings used in the author–title catalog which have references, whether names, series, or titles.
   c. A subject authority file on two tape reels [only a small portion of the second tape reel is used for this purpose; see (d) below]. This file contains all headings used in the subject catalog, both names and topical subjects, whether or not they have references.

d. The ONULP program file containing: (i) programs for the creation and updating of the master title record file, for entry authorization and referencing, and for production of printouts for the author–title and subject catalogs, the shelf list, and the subject authority list; (ii) utility programs for supporting the ONULP program system.

5. Program documentation and operator instructions. In addition to the customary operator's instructions, this manual also contains all the program documentation supplied by the programming contractor (IBM Data Centre in Toronto).
6. One copy of the ONULP subject authority list, which contains the contents of the subject authority file.

In January 1969, the Ontario Council of University Librarians recommended that a research and planning office be created for the establishment and development of an Ontario universities' bibliographic center. This recommendation was endorsed by the Advisory Joint Council on Coordination of Ontario University Library Research Facilities (comprised of all members of the Ontario Council on Graduate Studies and the Ontario Council of University Librarians) and was approved by the Committee of Presidents of Universities of Ontario in February 1969.

C. Donald Cook was appointed research and planning officer effective October 1, 1969. His terms of reference required him to organize and conduct, under the direction of the Steering Committee of the Advisory Joint Council, the research needed to establish a factual base for the bibliographic center, and to draw up an operational plan for it. He was to investigate, in the order of priority determined by the Steering Committee, the various possible areas of cooperation among the Ontario University Libraries, analyze data gathered at that time on the needs of each library, and consider possible methods of cooperation to meet those needs. The research and planning officer was to estimate the relative costs and benefits of these methods in comparison with present operations. He was then to present the results of his investigations, together with appropriate documentation and recommendations, to the Steering Committee.

The Council of Ontario Universities (formerly the Committee of Presidents of Universities of Ontario) recognized that a continuing staff unit would be required to develop and implement programs of library cooperation, and the decision was taken to create an Office of Library Coordination as the successor to the Bibliographic Centre Project. C. Donald Cook, who was research and planning officer for the project, was appointed director. The Office of Library Coordination reported to a Board for Library Coordination appointed in October 1971. Membership of the board included three librarians, three graduate deans, and three members of the professoriate. With the establishment of this board, the Advisory Joint Council on the Coordination of University Library Research Facilities was dissolved at its own request.

However, in the annual report of the Council of Ontario Universities for 1971–72, the following decision was taken:

> During the annual budgetary process of COU in the Spring of 1972, a decision was taken to suspend financial support of the Office of Library Coordination until a clear and satisfactory programme was presented by the Board. This decision did

not represent any diminished commitment to the objectives of library coordination, but rather the desire to see a clearer focus developed for the activities of the Office.

The Board for Library Coordination then entered a period of intensive review and reassessment of activities. It was now up to the board to develop a program by which a cooperative library system for provincially assisted universities could be created. The time was indeed propitious for network development, and the library community was in accord. The supply of plentiful money of the 1960s was gone, and the era of shared resources and joint development was at hand. To assist the board in its decision making, it formed two committees. One, the Committee on the Development of Cooperative Research Collections, was to make recommendations on collection policies, including depository libraries for little-used materials. The second committee was the Committee on the Development of Union Catalogs. By April of 1973, the board had made its proposal to the Council of Ontario Universities and received its approval for the establishment of the Ontario Universities Library Cooperative System. The guidelines for the OULCS are clearly enumerated at the beginning of this article, but essentially, emphasis was placed in three main areas—improved information services to users of libraries, rationalization of collection building, and a greater sharing of research resources. In the fall of 1973, Ralph Stierwalt was appointed as director of the new system. Thus, the Ontario Universities Library Cooperative System was established 10 years after that first venture into cooperative activity undertaken by the Ontario New Universities Library Project in 1963.

BIBLIOGRAPHY

Beckman, Margaret, and Ralph E. Stierwalt, "The Ontario Universities Library Cooperative System, and Implications for Regional and National Networks," presented at the Canadian Library Systems and Networks Symposium sponsored by the CLA, Toronto, June 1974.

Bregzis, R., "Ontario New Universities Library Project, an Automated Bibliographic Data Control System," *College Research Lib.*, **26**, 495–508 (November 1965).

Harris, J. L., "Review of Ontario New Universities Library Project: Author–Title Catalogue, May 1965; Subject Catalogue, April 1965," *Univ. of Toronto Lib. Doc.*, **17**, 48 (January 1966).

Keefer, M., and L. G. Fisher, "Review of Ontario New Universities Library Project: Author–Title Catalogue, May 1965; Subject Catalogue, April 1965," *PNLA Quart.*, **30**, 93–94 (October 1965).

Martin, J., "Building a Reference Collection for a New University Library," *Ontario Lib. Rev.*, **59**(i.e., **49**), 69 (May 1965).

Merry, S. A., "Ontario New Universities Library Project, a Centralized Processing Experiment Completed," *College Research Lib.*, **29**, 104–108 (March 1968).

"Ontario New Universities Library Project," *Ontario Lib. Rev.*, **48**, 35 (February 1964). Reprinted from Ontario Government Services, November 1, 1963.

Stierwalt, Ralph E., "The Cooperative Library System for the Ontario Universities," *Ontario Lib. Rev.*, **58**, 2 (June 1974).

GROVER C. BURGIS

OPERATIONS RESEARCH

Operations research (OR) is the use of scientific methods to study the functions or operations of an organization so as to develop better ways of planning and controlling changes. It can be viewed as a branch of management, engineering, or science, or as a special combination of the three. As part of the field of management, its purpose is to assist decision makers in choosing preferred future courses of action by systematically identifying and examining the alternatives which are available to the manager, and by predicting the possible outcomes from such actions. As far as possible, quantitative comparisons are made of the costs, the benefits, and the risks associated with each of the possible strategies; and an effort is made to find the best or "optimal" strategy relative to the policies, objectives, and resources of the particular organization. The quantification of these relationships is not intended to preclude consideration of qualitative factors, but rather to isolate and sharpen the decision makers' perception of such issues. In practice there is a real danger that sophisticated numerical arguments will dominate such deliberations and possibly subvert the true mission of an organization. For this reason, managerial operations research is more art than science. It is an aid to management and not a substitute. Historically, it is closely related to the scientific management movement of the early 20th century, but it is of more recent development and reflects a much higher level of achievement in the study of management problems in regard to both the level of complexity of the problems considered and the level of sophistication in the techniques employed.

As a branch of engineering, operations research is concerned with the analysis and design of systems for automating and augmenting management-type functions, especially those concerned with information processing and control. Such systems are not intended primarily to replace managers with computers, but to make it possible to exercise much better human control over the complex technology that characterizes modern society. This concern with the interface between men and machines has formed a close relationship between operations research and industrial engineering, which is traditionally concerned with the design of factories and other work systems. The incorporation of operations research techniques in the planning and control of such systems usually creates the need for much better management information systems that can gather the necessary data and process it in a way that is most useful for decision making in the organization. The development of such "cybernetic" feedback systems has been made possible by the invention of computers and telecommunication equipment by electronic engineers. More recently, engineering is concerned with the application of system techniques to the development of large-scale societal systems in such areas as health, environment, energy, regional planning, community services, education, etc. This movement from mechanistic systems to those involving more humanistic considerations has required systems engineers to cooperate more closely with behavioral and social scientists, and to seek new ways to blend quantitative methods with qualitative attributes and value judgments. Engineering operations research is primarily concerned with ad hoc solutions of real problems. The methods used to solve the problem and the generalization of one solution to other areas of application are secondary considerations.

Operations research is also viewed as a form of applied science, and is closely related to the fields of statistics, computer science, and optimization methods. These subjects have proven to be most useful in the modeling of managerial problems and in the design of sociotechnical systems. But, more generally, many of the pioneers in the development of operations research thought of it as a vanguard of a scientific revolution that would put science more directly in the service of society. In 1949, the British physicist J. D. Bernal (*1*) said:

> . . . In principle [operations research] amounts to the statement that any human activity and any branch of that activity is a legitimate subject for scientific study. Once this is accepted in practice, which implies the provision of research workers to carry out these studies, the way is open to a new level of man's control of his environment, one in which economic and social processes become scientific through and through.

Bernal saw operations research as the great lesson to be learned from World War II, leading eventually to a profound social revolution. Marshall McLuhan (*2*) sees operations research as a way of generating social energy by deliberately mixing different technologies and their attendant cultures. He says: "It programs the mixture principle as a technique of creative discovery." Such views tend to take operations research beyond the limits of conventional science which is traditionally concerned with the accuracy and elegance of the arguments used in operations research models.

Beginnings

Operations research began with the efforts of small teams of British scientists who were mobilized at the beginning of World War II to help solve pressing military problems. Under the direction of Nobel Laureate P. M. S. Blackett (*3*), "Blackett's Circus" quickly demonstrated the value of interdisciplinary scientific approaches to operational problems. Their success led to early imitation by U.S. and other allied groups, and to the eventual recognition of operations research as an integral part of modern military management. Much of the early work in the U.S. was done by university-based, government-sponsored "think tanks." The use of operations research techniques in business, industry, and government grew rapidly during the 1950s and 1960s. Today, most large companies have special groups which specialize in the application of the OR approach to corporate problems. Many consulting firms provide such services to business, government, and military organizations on a contractual basis, usually to the higher levels of decision making in the organization. The work of these groups has been the major factor in the development and employment of large, computer-based, management information systems in industry and government. The movement in industrial operations research is away from the earlier concern with relatively small, isolated problems toward closer and more integrated involvement with the total management system of the organization. Ideally, operations researchers take a "total systems" approach to problems, starting with desired effects before considering the multitude of factors and relationships that contribute to such efforts. This approach tends to clarify organizational objectives and to permit greater decentralization and a wider distribution of decision making in the organization.

Special courses and academic programs in operations research were started in the early 1950s at Massachusetts Institute of Technology, the Johns Hopkins University, and Case Western Reserve University. By the end of the 1960s, most universities were offering some kind of program in the subject. Preparation for professional practice as an operations research specialist has been strongest in the engineering schools, business schools, and military academies. Departments of applied mathematics, industrial and systems engineering, and quantitative methods in business and economics are the kinds of faculties that offer advanced graduate study in operations research. Like statistics and computer science, two closely related areas, operations research technics are now being taught widely as supplementary topics in many other disciplines. As an academic subject in its own right, however, emphasis is placed on the mathematical aspects of the subject and on those methods which have proven to be especially useful in describing and solving many kinds of decision problems.

In practice, operations research remains an eclectic art and is usually undertaken as a team effort combining the skills from many disciplines. Initially such teams were largely dominated by physical scientists, who were interested in applying their scientific methodology to operational problems. More recently their ranks have tended to give way to engineers, economists, psychologists, mathematicians, and computer scientists. The common unifying theme to their work is the task of formulating real world problems in such a way that they can be analyzed in a systematic fashion and solutions can be proposed that have credibility through logic and experience. Frequently, it is found that formulations and solution techniques perfected in one problem area have considerable transferability to other problem areas. The two major professional societies in the United States are the Operations Research Society of America (ORSA) and The Institute of Management Sciences (TIMS). Recently, the two have discussed a merger and they do cooperate in holding national meetings and in some publishing ventures.

Methodology

The literature of operations research follows the general style in science of reporting results in terms of their logical justification rather than the historical accidents and intuitions that led to their initial discovery. The established pattern is to perfect, polish, and exhaust all of the logical extensions that are implicit in any one formulation of a problem. The formulations are called models, which are a way of representing a hypothetical problem situation by a set of mathematical equations. Models are developed in an iterative manner that alternates between testing the model against reality and examining the model for its logical validity.

The process begins with a simple model, which captures some essential feature in the problem and can be enlarged to include more of such features. Eventually, very elaborate models may be used to approximate more closely the actual decision situation.

The goodness of a model is related to the ease with which it can be made to correspond to reality, its sensitivity to the assumptions made, its flexibility in application, its richness in deductive possibilities, its computability, and its plausibility to decision makers. By experimenting with assumptions about the various factors that influence the variable elements in the model, the analyst can search for the combinations that will yield the optimal benefits. Thus, the operations research model serves the same purpose that a laboratory does for the basic scientist. The major difficulties are in specifying and measuring the "benefits" in a decision, being certain that all useful alternative courses of action have been considered, and in predicting the changes in environmental factors that will affect the appropriateness of a model and its solution.

Over time a large collection of models has been developed, and experienced analysts are able to make use of these results in formulating new problems. The main division in the classic models is between programming models and simulation models. Programming models (not to be confused with computer programming) are algebraic techniques for finding the best combination of factors when there are very many possible combinations to choose from. Simulation models are more concerned with describing how very complicated systems behave and predicting the future state of such systems as a result of chance events and deliberate changes in their configurations. Dynamic models are another important class. Such models focus on the stability of systems, their rates of changes, and acceleration factors. Another important class includes the logical models which can be used to structure multiple and hierarchical objectives, define priorities, and to lay out scheduling patterns.

The literature on operations research models and techniques is very large. Many specialized journals concentrate on specific classes of models and areas of application. A thorough familiarization with these methods now requires a lengthy period of study and experience. Such knowledge is often especially useful in making initial formulations of problem situations and in devising more efficient solution techniques for complicated computational problems. However, the successful application of operations research methodology to organizations is still more art than science, as is shown by the skill of some practitioners in modeling almost any kind of problem by one technique or another. The most important ingredient is the ability to translate such analytic solutions into meaningful operational policies and decision-making methods. Here the confidence and cooperation of the managers and operators is crucially important.

THE OPERATIONS RESEARCH APPROACH

Operations research begins with the study of the people who make decisions in an organization and seeks to make more explicit the alternatives they face and their reasons for making choices. There are four major steps: (*a*) formulation of the decision problem, (*b*) construction of a model of the decision problem, (*c*) analysis and design of a system for solving the problem, and (*d*) incorporation of the system in the organization. The total process is a cyclic one, that is, the research team begins with an elementary formulation of the problem and the construction of as simple a model as is possible to capture the essential features. This leads to a solution system that can be used in an experimental way in the organization to see how it affects the original problem situation. This usually leads to a much better clarification of the problem, enrichment of the model, refinement of the system, and a new round of experimentation in the organization. The process is intended to continue in this way to evolve into a fully satisfactory control of the operations under study, and to also lead to higher levels of management decision making. Because of the hierarchical nature of such decision making in an organization, it is possible to begin at various problem situations and arrive at the same level of understanding and control. However, it is usually most effective to begin with isolated problem situations and then work toward their convergence in a more common structure of decision making, rather than to attempt to develop a total management system at the outset.

The four-step process described above and shown in Figure 1 is augmented by the available analytic tools which researchers can gain from the experience of others. Much of the literature of the field is concerned with the augmentation of this collection of tools and techniques, and the preoccupation of researchers with this aspect of their work has led to substantial criticism about their inability to come up with practical answers to real problems and their tendency to seek problems that fit their techniques. Steps 2 and 3 in Figure 1 form a more well-defined part of the total process because of the level of abstraction from the messy

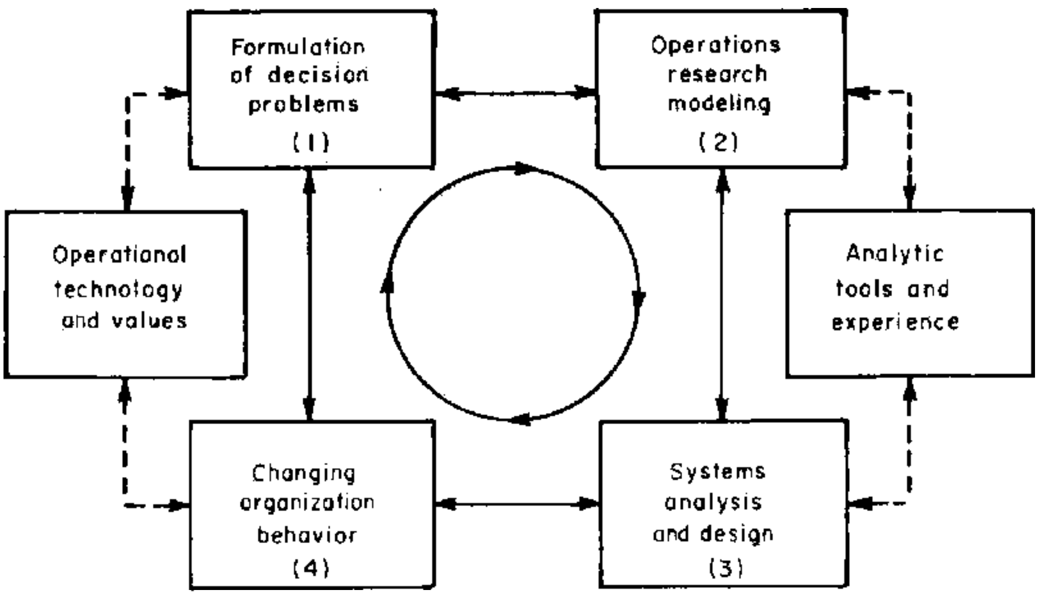


FIGURE 1. *Steps in the operations research process.*

details of real situations and the availability of the enormous formal scientific literature. It is not unlikely that many researchers would prefer to cycle through Steps 2 and 3 as much as possible and minimize their involvement in the other parts of the whole cycle. However, the greatest challenges to the field are precisely in the commitment to complete the full cycle in a satisfactory way.

Operations research has been a major force in defining the role of the modern manager as primarily that of the decision maker. As Miller and Starr (*4*) point out, the manager has to "do" many things in an organization. "But most organizations make continual attempts to relieve a manager of his more or less routine operations so that he will have more time for the critical decision function . . . He is rewarded and evaluated in terms of his success at making decisions." The distinction between deciding and doing is a simplification of a real managerial situation, but it does permit conceptual analysis of the decision process. Many different definitions of this process are possible, but for our purposes the following sequence of decision-making operations, taken from Miller and Starr, will serve as a useful model.

1. Choose the objective; specify its dimensions and value.
2. Isolate all of the variables that are pertinent to the attainment of the objective value.
3. Develop the relationships that exist among the variables.
4. Distinguish controllable variables from those which are not controllable, and classify the latter as to whether they are random or due to competitive strategies.
5. Develop forecasts and predictions of random variables; determine how stable and reliable the forecasts are.
6. Develop the function that relates the variables to the measure of effectiveness in attaining the objective.
7. Identify the restrictions that limit possible values of the controllable variables.
8. Choose those values of the controllable variables that will maximize the degree of attainment of the objective within the limits set by the restrictions.

Generally speaking, degree of attainment can only be maximized for one objective at a time, but one can do this within restrictions placed on the degree of attainment of other objectives at the same time. When decisions are affected by the actions of intelligent competitors, it is necessary to take this into account when formulating the best strategy, and it may be desirable to strive to minimize one's possible losses. Special theories are applicable to such situations. Conflicts between goals within a single organization are not uncommon and may make it impossible to ever achieve true optimization, but often it is possible to find specific objectives which are at least consistent with other goals and make it possible to find "sub-optimal" solutions.

OR MODELS AND SYSTEMS ANALYSIS

When decision problems can be formulated in the theoretical manner described above, it is relatively easy to move on to the next steps of building analytic models and designing systems for applying the results of the models. In practice, of course, it is not very easy to formulate problems so neatly, and it is always helpful to do this with a view toward how the formulations will lead to useful models. For this reason, experience with the modeling process is useful in formulating problems, as long as it doesn't tend to force the problem to conform to known models, and thereby lose its true identity. A considerable amount of interaction between the modeling and the problem-formulation steps is needed in order to capture all of the essential elements in the problem situation and to formulate them in a manner that will make best use of the analytic tools and experience available.

The most widely used OR model is that of linear programming, which is a technique for finding the best allocation of commonly used resources among the various activities that use those resources. If the activities use the resources in amounts which are proportional to the outputs of the activities, and if the total value of the output is proportional to the output of each individual activity, then for a given set of resources, it is possible to find the optimal assignment of resources to activities. Models of this kind have been used to find optimal allocation of budgeted funds to the selection and purchase of library journals. Very sophisticated techniques for solving such problems are available, including applications where the proportionality property does not hold and when there are many different kinds of restrictions on the solution. Sometimes it is possible and desirable to formulate a general allocation problem into a collection of subproblems where the solution of one is related to the others, and the overall solution can be found by systematically examining each of the subproblems in a sequential manner. For example, when planning journal selection policies over many future periods of time, this technique, called dynamic programming, has been found to be especially applicable.

A different kind of modeling that has been especially useful to information and communication systems and other types of service organizations is concerned with the analysis of waiting lines or queues when the demand for service follows a random pattern with regard to both the time when the demand is made and the amount of service requested. If the capacity of the service unit to satisfy such requests is limited and close to the total level of demand then a waiting line is almost certain to form and could grow quite large or cause many patrons to depart without receiving service. In general, it can be shown that such systems need as much as 50% excess capacity over demand in order to provide relatively prompt service. Models for studying this type of situation were first developed for the telephone industry in order to establish acceptable standards for the availability of telephone lines to customers. Subsequent experimentation and theoretical developments broadened the scope of application, and operations researchers have used such models to study many different kinds of service situations. More recently, it has been applied to the design of shared computer systems to establish standards and priorities in the handling of requests for computer time.

The best exposition of this kind of modeling in a library context is given in P. M. Morse's book *Library Effectiveness* (5). Professor Morse is a noted expert on queueing theory, and he shows that many aspects of the behavior of users in a library can be readily modeled as random processes. That is, one can create demand patterns by means of chance devices or mathematical equivalents to such devices, and such patterns are reasonable approximations of the actual behavior of users. In this way, one can predict the availability of library materials to the average patron under normal circumstances and evaluate the advantages of changing loan periods, acquiring duplicate materials, or restricting items for in-library use only. A more recent study by W. B. Rouse (*6*) used this technique to determine the optimal staffing of service desks in libraries and to predict the total volume of circulation of a library collection.

An alternative method of studying systems which are subjected to random perturbations is by computer simulation, whereby the computer is made to generate such occurrences by mathematical methods and then keep close track of the consequences of such events over a long period of time. This method is often used when the characteristics of the system under study do not conform to the assumptions and other limitations in the use of queueing theory. A good example of work of this kind is seen in the studies by Baker and Nance (*7*) of different library policies and their effect on various measures of library performance. These models tend to use rather simplified descriptions of individual operations, but together form a very complex behavioral pattern. It has the advantage of being able to show what might happen over very long periods of time, and to do this quickly for many different kinds of situations. Unfortunately, because of the inability to establish theoretical guidelines for such studies, it is often difficult to know how reliable such forecasts are. However, as operations research has moved toward the study of larger and more complex systems, simulations techniques have become more important as the best available tool for predicting the long-term effects of different policies in the governance of such systems.

The application of operations research models in the planning and control of an organization requires a considerable effort in collecting experimental data and testing the model for its applicability to a given situation. Furthermore, the actual use of such models on a day-to-day basis requires the input of reliable data on a regular basis. For this reason, operations research work often leads to substantial revisions in the way information is processed in an organization. In industry, this development is evidenced by the large management information systems that have come to be commonplace features in large corporations. Because such systems are designed for decision-making purposes and not historical record keeping, they tend to place a high priority on timeliness as well as accuracy, and often require the use of computers and telecommunication equipment. The development of such a system can have profound effects on the organization since it makes possible a different distribution of responsibility and authority. In general, the effect is to enable top managers to delegate decision-making powers to subordinates within certain guidelines, and thus to allow more decentralization, flexibility, and local autonomy to exist. The trend is to attach more importance to the process of decision making and planning as it is practiced throughout the organization, and to give less weight to the development of master plans and policies.

CHANGING ORGANIZATIONAL BEHAVIOR

The final step in the operations research process is that of implementation, or the actual use of models and systems in the operations of an organization. This step has always been the most difficult to describe and evaluate, and it has been the greatest source of dispute for critics of operations research and systems analysis. Recently, much more attention is being given to this topic by OR practitioners, as they have become more aware of the limitations of their techniques in developing adequate models of organizations of any significant size or complexity. The systems approach is aimed at a totality of understanding that encompasses all factors, including the human ones; and yet, the formal determinism of systems science usually precludes adequate treatment of human behavior and tends to promote systems which replace, compete with, or use people. How to correct this situation is the major concern of a new grouping of practitioners who call their work "large-scale systems."

R. H. Roy (*8*), in his book *The Administrative Process,* points out how numbers tend to dominate managerial thinking. They push aside intangible factors which are not easily quantified, and often assume an aura of accuracy that cannot be justified. Ideally, Roy says, "decisions should be made by: (1) maximizing the available precise information; (2) according to the quantitative elements only that degree of confidence merited by the numbers; (3) giving due and proper weight to all the other intangible, non-quantifiable factors." Too often, he says, Steps (2) and (3) are abused and the numbers are allowed to set aside, negate, and dominate the intangible elements. Roy is clear in his continued advocacy of the use of numbers in decision making. For him "the more numbers there are and the more accurate they are the better." But, his concern for their misuse is getting more attention.

Operations research has made it possible and not uncommon to find extremely powerful mathematical methods being used to solve relatively small problems with a degree of scientific certitude that is out of proportion to the assumptions and conditions which made it possible to formulate the problem in the first place. As this approach is extended to encompass situations of a much larger scale and complexity, the analytic techniques often falter and the role of subjective judgment becomes more apparent. Indeed, it has been argued that operations research methods are only valid at the suboptimal level, that is, within an arbitrary framework of values and restrictions. R. L. Ackoff (*9*) has pointed out that the real benefits of systems planning in an organization are not derived by "following a plan" but by the organization engaging directly in the planning process itself as an ongoing activity. "Effective planning cannot be done to or for an organization; it must be done by it," Ackoff says. "Therefore, the role of the professional planner is not to plan, but to provide everyone who can be affected by planning with an opportunity to participate in it, and to provide those engaged in it with information, instructions, questions, and answers that enable them to plan better than professional planners can alone."

As an organization makes more use of operations research and system analysis it must necessarily increase the mathematical literacy of all persons in the organization to the point that meaningful dialogue takes place between users and researchers. In time, mathematical models and computer methods become accepted ways of collecting, processing, storing, and retrieving the information needed for planning purposes. These techniques can be helpful in organizing the planning process itself, which must be continuously updated, coordinated, interactive, and experimental. Systems for processing operational information in an organization are akin to business accounting systems, which for all of their inaccuracy provide some limited sense of order to a highly complex situation by engaging the conditional belief and understanding of those who use the system.

What is most different about operations research models in the applied context is the emphasis on their limitations as "canned" substitutes for human thinking and ingenuity, and on the value of the modeling process as a creative activity. J. J. Solberg *(10)* offers the following principles for large-scale systems modeling:

1. A model should not be taken too literally. The more elaborate and sophisticated a model is, the less easy it is to be objective in evaluating its usefulness.
2. A particular model should not be oversold. When a model is sold as a "package of truth" rather than a set of plausible assumptions leading to useful conclusions, the later discovery of errors may cause a backlash out of proportion to the errors made.
3. The deduction phase of modeling should be rigorous. If it is not rigorous, it is not possible to distinguish external errors in formulation from internal errors in logic.
4. A model should not be pressed beyond its limits, nor be expected to give accurate results from inaccurate or irrelevant facts.
5. Models should not be criticized for failing to do what they were never intended to do.
6. Models should be validated. Validation can be carried too far. An enormous effort may be required to increase one's confidence just a little bit more, and it may be wiser to tolerate a lower level of confidence.
7. Do not build a complicated model when a simple one will satisfy the purposes of the user.
8. The medium of expression for a model should be selected according to its intended purpose. Models should not be shaped to preselected solution techniques, but rather the problem should shape the model and the technique.
9. Some of the primary benefits of modeling are associated with the process of developing the model.

"Generally speaking," Solberg says, "a model is never as useful to anyone else as it is to those who develop it. The model itself cannot contain the full knowledge and understanding of the real system that the builder must acquire in order to successfully model it, and there is no practical way to communicate this knowledge and understanding adequately."

In still another paper on the changes in system modeling required in large-scale systems analysis, W. K. Linvill *(11)* argues that it is unlikely that systems analysts can continue to rely on detailed quantitative methods in the future. He says, "the center of gravity of activity in systems analysis has moved from mechanistic to humanistic systems; and accordingly, there is an increasingly strong demand for including behavioral and social sciences as a background for the analytical modeling work, as well as the technological and quantitative concepts that have been applied up to now." He goes on to say:

> Humanistic systems are living organisms and must be treated in a way fundamentally different from mechanistic systems. The system analyst must deal with human beings. He must develop agreements instead of controls, he must discover objectives rather than to set them, he must discover constraints and utilize freedom to an unusual degree. There must be a vital interactive humanity involved in humanistic system design. To be most useful these attributes must be added while the familiar characteristics of the mechanistic system analyst are not lost.

This new awareness on the part of systems analysts of the limitations of their methods has revived interest in the team approach that characterized earlier OR efforts and included many persons with operational experience as well as a wide variety of scientific specialists.

Operations Research in Libraries

The history of the application of operations research to the problems of libraries is surprisingly long. Many of the early pioneers in operations research, notably J. D. Bernal (*12*) in England and Vannevar Bush (*13*) in America, were concerned about the deficiencies they observed in conventional methods of scientific communication. They were convinced that the journal was already obsolete and were impatient to see the development of new computer-based methods of storing, retrieving, and transferring information. They argued that scientific communication is the key to the successful application of scientific methods to societal problems, since communication takes the place of administration in guiding and coordinating work in the scientific community. Their dream of new kinds of electronic devices that would replace the book, the journal, and the library remains still a dream for the most part, but one that continues to capture the imagination of many scientists.

Their approach to library problems—the development of a totally new system technology—was well described by one of their contemporaries, the librarian Fremont Rider (*14*), who had made many studies and experiments on library storage problems at Wesleyan University and came to the conclusion that "no emandations of present library method alone were going to provide a sufficient solution to our growth problem." With remarkable anticipation of what is now called the systems approach, Rider said:

> And the reason for our failure to integrate what were really facets of one single problem was that we were blinded by the *status quo*. We insisted on continuing to accept as library axioms, unalterable and unquestionable, certain assumptions which no longer had validity, such dicta, for instance, as: libraries are collections

> of books; books are stored on shelves; library materials have to be catalogued; catalogs have to be made on cards; books must be arranged by their call numbers, etc., etc., etc. It is not until we have looked behind and beyond every one of these—and many other—supposedly basic axioms of library methods, and have seriously questioned their validity as axioms, that we begin to make any real progress.

And when he did this, Rider came to a new synthesis based on the microform card. More recently, and in the same vein, J. C. R. Licklider (*15*) argued that: "One must be prepared to reject not only the schema of the physical library, which is essentially a response to books and their proliferation, but the schema of the book itself, and even that of the printed page as a long term storage device, if one is to discover the kinds of pro-cognitive systems needed in the future."

More in keeping with the traditions of operations research is the work of Philip Morse and his followers, who have studied libraries as operational systems in need of improvement. Morse was a colleague of Vannevar Bush at the Massachusetts Institute of Technology and first president of the Operations Research Society of America. He studied library problems partly because of his genuine interest and concern in this area, and partly because the university library was a convenient and rich laboratory for his students at MIT. Similar reasons, along with financial support from the National Science Foundation's Office of Science Information Service, prompted several other university-based operations research groups to give special attention to library problems. Some of these early studies were headed by Morse (*5*) at MIT, R. H. Roy (*16*) at Johns Hopkins, R. L. Ackoff (*17*) at Case-Western, C. W. Churchman (*18*) at Berkeley, F. F. Leimkuhler (*19*) at Purdue, and A. G. Mackenzie and Buckland (*20*) at the University of Lancaster (England). The participants in these studies and their work have spread to many other institutions and have merged with the efforts of two other groups, those concerned primarily with the development of new kinds of information systems and those concerned primarily with the development of the field of information science. The former group is more in line with the ideas of Vannevar Bush and is computer oriented. The latter group is more directly in the tradition of library science and is concerned with the mathematical and logical description of basic phenomena in information processes.

The practical motivation on the part of library managers for operations research studies is the pressure to economize and expand activities by means of computers. OR is seen as the best way to conduct exploratory studies before making costly commitments for new computerized systems. As Morse says, the need is for logical models of the library that can be experimented with in order to see what is most useful and what data are needed to make a new synthesis of libraries and computers work most effectively. One needs to anticipate the management problems of new systems in order to design the appropriate feedback and control devices. The initial task is to model the library as it functions today and then to experiment with new systems. The preoccupation with existing systems is necessary to form a sound basis for predicting the effects and guiding the development of innovations.

SUBOPTIMIZATION AND THE HUMAN FACTOR

A. G. Mackenzie (*21*) argues that OR and systems analysis are of much more basic importance to the library than a necessary prelude to library automation.

> The library has advanced a long way from the time when it was merely a collection of books, with a relatively small number of users, each knowing his way about its shelves. With the expansion of higher education and advances in technology, it has become much more a precise instrument for transfer of information from the author to a large number of users—often in a very short space of time, because of the numbers involved—who need a great deal of guidance and help. The library manager is a relatively new concept. . . . The professional skills and techniques are essential, but to them is being added the realization that a library, if it is to perform its full function, calls for the study of cost-effectiveness and similar concepts drawn from industry.

Mackenzie notes that despite the numerous theoretical studies reported in the literature, there is very little evidence of such studies being used to make any major changes in operational library systems. He is concerned that librarians may be ignoring the potential merits in such studies.

The slowness with which fundamental changes in library methods have emerged over the last several decades is due to several factors other than antipathy on the part of librarians in making use of operations research techniques. Few libraries find it possible to finance research activities of this kind, and support at regional or national levels is exceedingly limited. Training in systems analysis methods is being introduced in library schools and eventually this should have a salutary effect. But, of greater significance is the scope and complexity of the task of making fundamental changes in library methods. Because of the impossibility of isolating any single library from the regional, national, and even international environment in which it operates, the scale of any major innovation is immediately very large. The study of any single major operation in a library quickly brings the analyst into confrontation with system constraints beyond his control. The whole economic viability of the library depends on such interactions with other libraries and other institutions. Furthermore, the library is saddled with a past which it cannot disregard and a commitment to the future which knows few limits. For these reasons it seems likely that major innovations will have to be fostered at the interlibrary level of operation; however, they will need a fundamental understanding of the library itself.

The greatest obstacle to the use of operations research methods in libraries is the human element. C. W. Churchman (*22*) points out that the user must be the most important consideration in the design of libraries and information systems. He is critical of efforts to measure library performance in purely physical or monetary terms. He says that the true benefit of such systems must be measured in terms of the meaning of information for the user. "People are not better just because they process information more rapidly or more coherently," he says. "People are better because they are better in a moral or aesthetic sense." The argument raises insurmountable problems for building the kind of model of man which is needed in order to study information systems in such a way. Even a speculative or dialectic information system, which could examine its own premises and argue from different points of view, would not escape the specter of dehumanization which Churchman finds implicit in the systems approach. Nevertheless, this does not deter his advocacy of the need for using such an approach as an inadequate but necessary technique. Erich Fromm (*23*) contends that "man is a system that can be studied like any other system"; and "that only to the extent that managers or, in general, people who try to understand society or a large enterprise, take the System Man as seriously as they take the system economics, the system technology, and so on, can they meaningfully talk about *human* ends in relation to the aims and ends of the managerial process." He believes that the development of non-bureaucratic, humanistic work systems is possible and no more difficult than space travel, and that "economic and social planning is blind if the Science of Man is not integrated into the science of management and social planning."

P. C. Wilson (*24*), in his study of bibliographic control, gives a proof of the impossibility of building a "universal bibliographic machine," without ruling out the possibility of machines of lesser power. He argues that bibliographic control is much more than simply locating items of information. Rather it is a kind of knowledge *about* knowledge; and, since knowledge is a kind of power, bibliographic control is a kind of power *over* power. "This mastery," he says, "is not the knowledge of the contents of texts; it is knowledge of all uses to which texts can be put, by all possible users in all possible circumstances. We shall never in this world have such control, but the idea is an intelligible one." Wilson recognizes the need for economic and technical considerations in the design of information systems, but he insists on the primacy of political considerations in the final analysis. "We can have no more bibliographic control than we can afford," he says, "but how much we *can* afford, and on whom it shall be spent and in what proportions, are never purely economic questions." Requests or demands for power, including the power of bibliographic control, are political requests, and they raise the issue of the rights of individuals for access to information services.

Despite these admonitions, no serious attempt has been made to develop analytic models of libraries that can take full account of the political and human considerations inherent in such systems. Only recently has there been a shift away from emphasis on the purely technical aspects of information systems development in the research programs sponsored by the National Science Foundation. In a recent announcement, the Office of Science Information Service (*25*) focuses attention on managerial, organizational, and economic aspects of the dissemination of scientific and technical information, but still falls short of the eventual need for a more comprehensive understanding of the political issues involved. The limitations here are in the methods themselves. In practice, all operations research is really suboptimization, and it is unlikely that the resources available to the study of libraries and similar systems are sufficient to overcome this deficiency in the near future. However, the thrust of even small-scale studies must be toward the eventual evolution of a harmonious, total system understanding. The best hope for achieving this goal is to develop subsystem models that are rigorous in their logic and consistent with the objectives and policies at the next higher level of system specification. In this way, more comprehensive models can evolve, as assumptions have to be modified or objectives are changed. There is the risk that the preoccupation with small-scale models may never lead to the development of satisfactory large-scale models, but this risk can be minimized if the implementation of analytic results is vigorously pursued, and in fact, as H. Wagner (*26*) says, begins on the first day of an operations research study.

MODELS OF DOCUMENT USAGE IN LIBRARIES

Operations research models that have been developed within library settings tend to focus on the library as a document storage and retrieval center. The majority of information in a library continues to be stored in book form. As P. M. Morse (*27*) notes:

> A book is a remarkably compact and accessible means of information storage. The usual book contains ten million bits of information, in nearly as condensed form as the magnetic tape reels of the modern computer, which can hold the equivalent of two to ten books per reel. But the information in the book is much more accessible than that which is on the tape. A book can be opened to any page; it can be read nearly anywhere and from nearly any posture. Before we decide to replace books with something else, hopefully more compact or even before we decide to store the books in a more compact or differently organized way, we should know in detail how the books are used at present.

As early as 1953, Morse and his colleagues in the Operations Research Center at the Massachusetts Institute of Technology began a series of studies of the institute's library system to develop methods which could be used in other libraries too. Some of these studies centered on the books and some on user's characteristics. Many of the results are collected in Morse's book, *Library Effectiveness: A Systems Approach (5)*.

The key model in Morse's study is one in which book usage over time can be predicted to follow a known mathematical form, settling down to a steady-state pattern after an initial period of popularity. The model is used to detect some interesting differences in the usage patterns of books in different subject fields, although the data are admittedly skimpy. The model is then used to make policy recommendations for such activities as book acquisition, circulation, retirement, and storage, in the light of the data obtained in the MIT Libraries. Morse warns that these recommendations are carrying the theory well beyond the available facts, but he notes: "Accuracy is not often important in reaching policy decisions; order of magnitude figures are far better than nothing." Elsewhere he says: "But as the library becomes more mechanized or computerized these data will become enormously easier to collect *if the computer system is designed to gather the needed data* . . . what is needed before computer designs are frozen is for models of the sort developed in this book to be played with, to see which of them could be useful and to see what data are needed and in what form, in order that both models and computers can be used most effectively by the librarian."

Many other studies of the patterns of the use of books and other materials in libraries have been made, as seen in the bibliography by Jain (*28*) and Chen (*31*). A notable early study by Fussler and Simon (*29*) at the University of Chicago provides considerable insight into the qualitative aspects of such data. Cole's study (*30*) of the pattern of journal usage in a petroleum library led to the development of a relatively simple exponential or geometric model of information obsolescence that has been used many times in subsequent applications. Jain (*28*) and Chen (*31*) made a very thorough comparative analysis of different usage models and proposed models which combined the best features of previous models and gave a more accurate prediction of book use. An important corollary development in such work has been the perfection of statistical sampling techniques for gathering and analyzing usage data.

LIBRARY STORAGE PROBLEMS

Many library usage studies were motivated by the search for more efficient methods of storing library materials that would minimize the inconvenience to users by discarding little-used materials or storing them in less accessible locations. The use of a depository for little-used material was the subject of a major study by R. W. Trueswell (*32*) at Northwestern University. Jain's study of usage at Purdue was related to another study by W. C. Lister (*33*), who developed several least-cost decision rules for the selection of library materials for compact storage. Two types of rules developed from these studies: one using time since publication or acquisition as the determining factor, and the other using some measure of current activity as the selection criterion. Leimkuhler and Cooper (*34*) show that when a simple exponential growth model is combined with the exponential obsolescence model, then the total circulation of a collection will increase proportionally to the size of the collection, depending on the growth and obsolescence rates. In this way, it is possible to predict how much circulation demand will be generated by a depository collection where age is the determining factor. They were also able to use this model to show how the average cost of circulation might be minimized by use of a book depository. These studies helped to demonstrate the need for a better determination of the costs of holding materials in libraries and the methods that might be used to achieve this. Mann's study (*35*) of storage problems is a good mathematical treatment of the subject.

More directly concerned with the physical attributes of book storage systems were the studies by Cox and Leimkuhler (*36*) of efficient methods of storing books by size. This model was based on the traditional library practice of using special storage procedures for items of unusually small and large dimensions. By describing the dimensional characteristics of a collection in a mathematical manner, the model shows how to determine the gain in storage capacity by using size as a criterion for shelving. This study led to other studies such as that by Gupta and Ravindran (*37*), who perfected the mathematical techniques; and by O'Neill (*38*) and Saxena (*39*), who perfected the statistical methods used in studying the dimensional characteristics of book collections. In general, such studies are able to demonstrate the extent to which improvement in shelving capacity might be gained by using such methods, which is rather limited for most collections but could be very important in large depositories. In addition to their reinforcement of the need for better cost data and other statistical information about libraries, these models also opened the way for demonstrating the applicability of the optimization techniques used in operations research. They also serve to bring into sharper focus the real material-handling problems in document systems. Models of this kind are also applicable to other kinds of information storage systems using computers and miniaturization, and possibly to the eventual procedure of transferring information from one kind of system to the other. The paper by Korfhage, Bhat, and Nance (*40*) shows how basic concepts in graph theory can be used to model networks of storage and retrieval centers.

BOOK AVAILABILITY, LOAN, AND DUPLICATION POLICIES

The main thrust in Morse's pioneering studies at MIT is to provide methods for measuring the effectiveness of various library policies in providing better access to the documents sought by users. Better access means that the document is more likely to be available at the time and place it is sought either as a specific request or as part of a larger search for information. The decision problems which Morse addresses include: the amount and allocation of book and periodical budgets; the purchase of duplicate copies; the placement of books in open shelves, stacks, and reserve collections; changes in loan policies; control of losses; limitations on shelf space and the use of storage areas. The approach taken is to estimate how many users will be inconvenienced as a result of changes in retirement, duplication, circulation, reshelving, and replacement of lost books, and then to compare these various measures of effectiveness with the dollar cost of making improvements.

One of the best examples of applying this approach in a library is the study at the University of Lancaster by Buckland (*41*) and others. The proportion of books having various levels of demand for use was estimated using a model similar to that proposed by Morse but modified to take explicit account of multiple copies of some items. The effect on satisfaction level, that is, the probability of a book being on the shelf when requested was calculated for various combinations of loan period, number of copies, amount of in-library use, and the probability that a reader will ask that a book be recalled or reserved. These calculations were made by means of a computer simulation model and showed that the overall satisfaction level was about 60%. A new policy of variable loan periods and selective duplication was established whereby the most popular 10% of the collection is subject to a 1-week loan period and carefully monitored for the need of duplicate copies. The new policy led to a surprisingly large increase in the number of books borrowed, which later subsided. It is believed that the initial improvement in satisfaction level led to increased demand which, in turn, acted to reduce the satisfaction level to a more stable level.

Buckland points out that the absence of books from the shelves can have a large effect on the success of users who browse for information and must depend on what is immediately available. He concludes that the shelves will tend to be systematically biased toward the less useful materials, since only about half of the 10% most popular items are likely to be present. Morse (*42*) notes that browsing appears to be at least as popular as catalog searching as a method of finding books and periodicals, and he believes that factual studies of browsing patterns are needed in order to improve the design and control of libraries. By employing techniques that were developed initially for guiding the search for submarines, Morse shows how the expected success of a library browser can be measured in terms of search time and an estimate of the potential relevance of the collection for the user's needs. He uses this measure to show how a browser might best distribute his time in different parts of a collection, and how a library might reorganize its collection to enhance its browsability. He also considers the question of whether to retire little-used items from the shelves by means of an age or usage criterion. Bookstein and Swanson (*43*) have developed models for monitoring the accuracy with which books are shelved according to their designated order.

REFERENCE SCATTERING AND DOCUMENT ACQUISITION MODELS

Attempts to formulate rules for the selective acquisition of library materials through the use of mathematical models have usually been associated with journal collections. The seminal work in this area is that of S. C. Bradford (*44*) as expressed in his "Law of Scattering," which holds that when journals are ranked according to their productivity of relevant articles to a particular subject, the productivity diminishes in an approximately logarithmic manner. More precise formulations of the law have been made by Vickery (*45*), Brookes (*46*), and Leimkuhler (*47*); and recently Wilkinson (*48*) clarified their arguments. Kendall (*49*) studied the literature of operations research from this standpoint and showed the relation between Bradford's Law and Zipf's Law in linguistics, as later confirmed in a paper by Kozachkov and Khursim (*50*). In a review of the subject, Buckland and Hindle (*51*) note that while most of the formal studies are based on citation data, studies by Kilgour (*52*) and others show that similar patterns have been found in document usage data.

Brookes (*53*) showed how Bradford's Law can be used to estimate the total number of papers that will be found if a complete search is made of the literature, as well as the total number of journals that will contain at least one relevant article. Leimkuhler (*54*) used the law for a different purpose. He showed that by partially ordering or classifying a file of journals according to their productivity, the expected time it takes to search for a particular piece of information can be greatly reduced. In particular, the benefits from a two- or three-stage search procedure are relatively very large when compared to the advantages of more exhaustive classification schemes. Buckland and Woodburn (*55*) combine Bradford's Law with Cole's exponential model of the obsolescence of document usefulness to show how a library with limited space could determine how many titles to acquire and how long they should be retained. Alternatively, they show how a library could best allocate a limited budget between the acquisition of new titles and their retention in storage. The criterion in these studies is the satisfaction of user demand as predicted by the scattering and obsolescence models.

Kraft and Hill (*56*) formulated the journal selection problem as a multiple choice model in which one seeks to determine the optimal allocation of present and future (expected) funds for purchasing journals, using a criterion based on expected usage as a measure of journal value. By employing various mathematical programming techniques, they were able to find several methods for finding an approximately optimal solution to this problem. In a subsequent study, Glover and Kingman (*57*) proposed an alternative mathematical formulation that has advantages in revealing the implications of the model, and in making it possible to use different solution approaches. Their approach makes it possible to introduce more realistic assumptions about how budgets might be adjusted to accommodate variations in expenditure patterns, and how the model can be made to adapt to the appearance of new journals in future periods. It is unlikely that many libraries could justify using such sophisticated techniques as day-to-day decision aids, but these models provide the basis for developing such tools and making it possible to coordinate journal selection decisions more closely with other managerial decisions and policies.

Newhouse and Alexander (*58*) developed a book selection model for a public library, which attempts to maximize the benefit the library provides to the community for a given book budget. Benefit is measured by estimating the circulation of a book and the present dollar value of the circulations. The dollar value is based on the price of the book, the proportion of borrowers who would otherwise buy the book, and the benefit of borrowing expressed as a fraction of the purchase price. The product of these factors is discounted over the life of the book in order to determine the equivalent lifetime benefit of a book in terms of present dollars. By combining this measure with the cost of acquisition to form a benefit/cost ratio, the library can determine a rank ordering of the relative advantage of purchasing different classes of books. Newhouse and Alexander found that benefits probably exceed costs for most classes of books, sometimes greatly, and therefore indicate that book budgets should be increased.

Total System Models

Operations research studies of the kind described above tend to isolate individual functions in an organization and examine them independently, to the extent possible, of other related functions. Such suboptimization is often necessary in order to make a rigorous analysis of the individual functions as parts of a larger and more complex system. However, there is the danger that a comprehensive and balanced view of the entire system will fail to emerge from the mere accumulation of many small-scale studies. For this reason, it is desirable that some early attempts are made to define the larger system within which the various subsystems operate, even though the larger models tend to be less rigorous and less immediately useful for pressing decision problems. Models of this kind for libraries are most commonly found in the schematic diagrams used for automation programs, where large areas of library activity and even entire libraries are viewed as subsystems of computerized information systems. Such models are highly mechanized descriptions of the flow of information along predetermined paths and according to a well-established decision-making structure. They are of more limited usefulness in analyzing alternative routings, unless they can be made to include a great number of variable characteristics. Often, this is too cumbersome a method of modeling for detailed analysis and it is difficult to establish limits and stable characteristics for the output from such models.

At Purdue University, Baker and Nance (*59*) developed a model for a library based on a simplified characterization of the objectives of three groups: users, funders, and librarians, and the various interactions of these parties in a library environment. This model revealed the need for librarians to take the initiative in creating a better understanding of the benefits and costs of the services they offer in order to offset the tendency for users to rely on previous experience and possible misconceptions, and to distort the image of the library in the eyes of the funders. They used this approach to model the behavior of a university branch library by means of computer simulation techniques that have been used for industrial and urban planning studies. They were able to show the possible long-range effects of different managerial attitudes and policies on the behavior of library patrons. Rzasa and Baker (*60*) studied the problems of goal setting and the measurement of performance by library managers.

At MIT Raffel and Shisko (*61*) made a systematic study of user preferences for reallocation of library budgets and the improvement of different services. They found that the library spends more on space for people than space for books and concluded that it would be better to promote outside usage through duplication techniques, paperbacks, and loan policies, than to spend money for economizing on book storage space. Twenty alternative proposals for changing library facilities and services by increasing or decreasing the budget were presented to a representative group of users for their opinions. The results showed that three major campus groups differ markedly in the kinds of changes they would favor. Undergraduates would reduce services to researchers and increase reserve book facilities. Graduate students would cut study space, reduce photocopy costs, and improve catalog and reference services. The faculty are most willing to change storage and cataloging practices in order to preserve and develop departmental libraries.

At the University of Pennsylvania, a major study of library objectives and performance measures was conducted by Hamburg (*62*) and his associates. They found that the many verbal statements of library objectives found in the literature did not lend themselves to the measurement of library performance in order to determine how proposed plans and alternative decisions may affect performance. Recognizing the primacy of the effect on societal objectives and the intermediate effect on persons in the society as essential considerations in the measurement of library performance, they propose to evaluate the "exposure of individuals to documents of recorded human experience." They propose several methods of measuring exposure, including one suggested by Meier (*63*) of counting the item-use days generated by each library transaction, and another in which just total user exposure time is measured for all activities. When coupled with an accrual method of matching costs and exposure to the appropriate operating time periods, it is possible to develop performance measures based on either the ratio of exposure to cost or the difference (profit) between the value of exposure and the cost, where the value of exposure might be based on an overall assumed benefit/cost ratio. In this way, the effect of changes in policies can be evaluated in terms of their effect on the exposure per dollar ratio measure or on the net gain in the value of exposure less cost.

Another approach to modeling a library as a total system is taken by Black (*64*) in his economic model of library operation. The library is conceived as primarily a producer of "circulation." The librarian chooses the division of his revenues between expenditures on wages and salaries, books and other materials, and on the purchase of equipment in such a way as to maximize circulation—subject to revenue constraints and demand patterns. Demand is a function of population, income per capita, and the implicit cost of poorer service. Equating demand to supply, Black finds the implicit cost of borrowing, the revenue needed to maintain equilibrium levels of circulation, labor services, and rates of purchase of materials and equipment. Each of these solutions is in terms of population, wage rate, income per capita, and book price. By knowing how these variables change over time it is possible to predict how the library will grow in response to these changes.

From the limited data available to him and by making several assumptions, Black shows that the implicit cost of borrowing grows at a weighted average of the rates of increase of wages and equipment costs. Revenue grows proportionally with population, per capita income, and the implicit cost of borrowing. Circulation also increases with population and per capita income, but decreases with the implicit cost of borrowing, that is, unit circulation cost. Data on public libraries for the period 1954–1962 indicate a growth of about 5% per year in circulation, 7% in expenditures, 2.8% in book stock, and 2.6% in library staff. Expenditures grew rapidly because of a 3.5–4% increase in book prices and wage rates. The implicit rate of increase in the cost of borrowing was 2% per year. There was also an apparent increase in productivity of about 1.5% per year, that is, more effective utilization of books and staff to provide circulations.

In the near future it is expected that considerably more research will be done on the economics of libraries and the supply and demand markets in which they operate, adding to the variety of scientific expertise available to operations research studies. At the same time, increasing attention must be given to the social, psychological, and political aspects of libraries both as institutions which render important intellectual and cultural service and as organizations which can use the operations research approach as a comprehensive, anticipatory, and participative science of creating the future.

REFERENCES

1. J. D. Bernal, *The Freedom of Necessity*.
2. M. McLuhan, *Understanding Media*.
3. P. M. S. Blackett, "Operational Research."
4. D. W. Miller and M. K. Starr, *The Structure of Human Decisions*, pp. 34–35.
5. P. M. Morse, *Library Effectiveness*.
6. W. B. Rouse, "Applications of Operations Research Techniques in Tufts University Libraries."
7. N. R. Baker and R. E. Nance, "Organizational Analysis and Simulation Studies of University Libraries."
8. R. H. Roy, *The Administrative Process*, pp. 85–86.
9. R. L. Ackoff, "Some Notes on Planning."
10. J. J. Solberg, "Principle of System Modeling," pp. 69–72.
11. W. K. Linvill, "The Changes in System Modeling Required by Societal Systems Analysis," p. 84.
12. J. D. Bernal, *The Social Function of Science*.
13. V. Bush, "As We May Think."
14. F. Rider, *The Scholar and the Future of the Research Library*, p. 90.
15. J. C. R. Licklider, *Libraries of the Future*, pp. 6–7.
16. R. H. Roy; see Johns Hopkins University, "An Operations Research and System Engineering Study of a University Library."
17. R. L. Ackoff; see M. Halbert, "An Operations Research Study of the Dissemination and Use of Recorded Scientific Knowledge."
18. C. W. Churchman, "Operations Research Prospects for Libraries."
19. F. F. Leimkuhler, "Library Operations Research."
20. A. G. Mackenzie and M. K. Buckland, "Operational Research."
21. A. G. Mackenzie, "Systems Analysis as a Decision-making Tool for the Library Manager."
22. C. W. Churchman, *The Systems Approach*, pp. 119–125.
23. E. Fromm, "Thoughts on Bureaucracy."
24. P. C. Wilson, *Two Kinds of Power*, p. 40.
25. National Science Foundation, "Improved Dissemination and Use of Scientific and Technical Information."
26. H. M. Wagner, *Principles of Operations Research*.
27. P. M. Morse, "Probabilistic Models for Library Operations."
28. Jain, A. K., "Sampling and Data Collection Methods for a Book Use Study."
29. H. H. Fussler and J. L. Simon, *Patterns in the Use of Books in a Large Research Library*.
30. P. F. Cole, "Journal Usage versus Age of Journal."
31. C. Chen, "Applications of Operations Research Models to Libraries."
32. R. W. Trueswell, "User Circulation Satisfaction vs. Size of Holdings at Three Academic Libraries."
33. W. C. Lister, "Least Cost Decision Rules for the Selection of Library Materials."
34. F. F. Leimkuhler and M. D. Cooper, "Analytical Models for Library Planning."

35. S. H. Mann, "Least Cost Decision Rules for Dynamic Library Management."
36. F. F. Leimkuhler and J. G. Cox, "Compact Book Storage in Libraries."
37. S. M. Gupta and A. Ravindran, "Optimal Storage of Books by Size."
38. E. T. O'Neill, "Sampling University Library Collections."
39. S. K. Saxena, "Compact Storage of Books in Open-Shelf Libraries Where Book Height Follows a Compound Type of Truncated Double Exponential Distribution."
40. R. R. Korfhage, V. N. Bhat, and R. E. Nance, "Graph Models for Library Information Networks."
41. M. K. Buckland, *Book Availability and the Library User.*
42. P. M. Morse, "Search Theory and Browsing."
43. A. Bookstein, "Models for Shelf Reading"; and A. Bookstein and D. R. Swanson, "A Stochastic Shelf Reading Model."
44. S. C. Bradford, *Documentation.*
45. B. C. Vickery, "Bradford's Law of Scattering."
46. B. C. Brookes, "The Derivation and Application of the Bradford–Zipf Distribution."
47. F. F. Leimkuhler, "The Bradford Distribution."
48. E. A. Wilkinson, "The Ambiguity of Bradford's Law."
49. M. G. Kendall, "The Bibliography of Operational Research."
50. L. S. Kozachkov and L. A. Khursin, "The Basic Probability Distribution in Information Flow Systems."
51. M. K. Buckland and A. Hindle, "Library Zipf."
52. F. G. Kilgour, "Recorded Use of Books in the Yale Medical Library."
53. B. C. Brookes, "The Growth, Utility, and Obsolescence of Scientific Periodical Literature."
54. F. F. Leimkuhler, "A Literature Search and File Organization Model."
55. M. K. Buckland and I. Woodburn, "Some Implications for Library Management of Scattering and Obsolescence."
56. D. H. Kraft and T. W. Hill, Jr., "The Journal Selection Problem in a University Library System."
57. F. Glover and D. Klingman, "Mathematical Programming Models and Methods for the Journal Selection Problem."
58. J. P. Newhouse and A. J. Alexander, "An Economic Analysis of Public Library Service."
59. N. R. Baker and R. E. Nance, "Organizational Analysis and Simulation Studies of University Libraries."
60. P. V. Rzasa and N. R. Baker, "Measures of Effectiveness for a University Library."
61. J. A. Raffel and R. Shisko, *Systematic Analysis of University Libraries.*
62. M. Hamburg, R. C. Clelland, M. R. W. Bommer, L. E. Ramist, and R. M. Whitfield, *Library Planning and Decision-making Systems.*
63. R. L. Meier, "Efficiency Criteria for the Operation of Large Libraries."
64. S. W. Black; see D. M. Knight, *Libraries at Large,* Appendix F–2.

BIBLIOGRAPHY

Ackoff, R. L., "Some Notes on Planning," Presentation at a meeting of the American Association for the Advancement of Science, Philadelphia, December 30, 1971.

Baker, N. R., "Optimal User Search Sequences and Implications for Information System Operation," *Amer. Documentation,* **20**, 203–212 (1969).

Baker, N. R., and R. E. Nance, "Organizational Analysis and Simulation Studies of University Libraries: A Methodological Overview," *Information Storage Retrieval,* **5**, 153–168 (1970).

Baker, N. R., and R. E. Nance, "The Use of Simulation in Studying Information Storage and Retrieval Systems," *Amer. Documentation,* **19**, 363–370 (1968).

Bernal, J. D., *The Freedom of Necessity*, Routledge & K. Paul, London, 1949.

Bernal, J. D., *The Social Function of Science*, MIT Press, Cambridge, Mass., 1965.

Blackett, P. M. S., "Operational Research: Recollections of Problems Studied, 1940–1945," in *The Armed Forces Yearbook 1953* (Brassey's Annual), Clowes & Sons, London, 1954, pp. 88–106.

Bookstein, A., "Models for Shelf Reading," *Lib. Quart.*, **43**(2), 126–137 (April 1973).

Bookstein, A., "Queueing Theory and Congestion of the Library Catalog," *Lib. Quart.*, **42**, 316–328 (July 1972).

Bookstein, A., and D. R. Swanson, "A Stochastic Shelf Reading Model," *Lib. Quart.*, **43**(2), 138–161 (April 1973).

Bradford, S. C., *Documentation*, Crosby Lockwood & Son, London, 1948.

Brookes, B. C., "The Complete Bradford–Zipf Bibliography," *J. Documentation*, **25**, 58–60 (1969).

Brookes, B. C., "The Derivation and Application of the Bradford–Zipf Distribution," *J. Documentation*, **24**, 247–265 (1968).

Brookes, B. C., "The Growth, Utility, and Obsolescence of Scientific Periodical Literature," *J. Documentation*, **26**, 283–294 (1970).

Brophy, P., G. Ford, A. Hindle, and A. G. Mackenzie, "A Library Management Game: Report on a Research Project," University of Lancaster Library Occasional Paper No. 7, Lancaster, England, 1972.

Buckland, M. K., *Book Availability and the Library User*, Pergamon, New York, 1975.

Buckland, M. K., "An Operations Research Study of a Variable Loan and Duplication Policy at the University of Lancaster, *Lib. Quart.*, **42**, 97–106 (1972).

Buckland, M. K., and I. Woodburn, "Some Implications for Library Management of Scattering and Obsolescence," University of Lancaster Library Occasional Paper No. 1, Lancaster, England, 1968.

Buckland, M. K., and A. Hindle, "Library Zipf: Zipf's Law in Libraries and Information Science," *J. Documentation*, **25**, 52–57 (1969).

Buckland, M. K., A. Hindle, A. G. Mackenzie, and I. Woodburn, "Systems Analysis of a University Library: Final Report on a Research Project," University of Lancaster, Lancaster, England, 1970.

Burkhalter, B. R., ed., *Case Studies in Systems Analysis in a University Library*, Scarecrow Press, Metuchen, N.J., 1968.

Burns, R. W., "A Generalized Methodology for Library Systems Analysis," *College Research Lib.*, **32**, 295–303 (1971).

Bush, G. C., H. P. Galliher, and P. M. Morse, "Attendance and Use of the Science Library at M.I.T.," *Amer. Documentation*, **7**, 87–100 (1956).

Bush, V., "As We May Think," *Atlantic Monthly*, July 1945, pp. 101–108.

Case Institute of Technology, O.R. Group, "An Operations Research Study of the Dissemination and Use of Recorded Scientific Knowledge," Cleveland, Ohio, 1960, NTIS PB 171 503.

Chapman, E. A., P. L. St. Pierre, and J. Lubans, Jr., *Library Systems Analysis Guidelines*, Wiley, New York, 1970.

Chen, C., *Applications of Operations Research Models to Libraries: A Case Study of the Use of Monographs in the Francis A. Countway Library of Medicine, Harvard University*, MIT Press, Cambridge, Mass., 1976.

Churchman, C. W., "Operations Research Prospects for Libraries," *Lib. Quart.*, **42**, 6–14 (1972).

Churchman, C. W., *The Systems Approach*, Dell, New York, 1968.

Coblans, H., "The Communication of Information," in *Society and Science* (M. Goldsmith and A. Mackay, eds.), Simon and Schuster, New York, 1964, Chap. 6, pp. 93–101.

Cole, P. F., "Journal Usage versus Age of Journal," *J. Documentation*, **19**, 1–11 (1963).

Cole, P. F., "A New Look at Reference Scattering," *J. Documentation*, **18**, 58–64 (1962).

Cooper, M. D., "A Cost Model for Evaluating Information Retrieval Systems," *J. Amer. Soc. Inform. Sci.*, **23**, 306–312 (1972).

Dougherty, R. M., and F. Heinritz, *Scientific Management of Library Operations*, Scarecrow Press, Metuchen, N.J., 1966.

Elton, M., and B. Vickery, "The Scope for Operational Research in the Library and Information Field," *ASLIB Proc.*, **25**, 305–319 (1973).

Flood, M. M., "The Systems Approach to Library Planning," *Lib. Quart.*, **34**, 326–338 (1964).

Ford, M. G., "Research in User Behavior in University Libraries," *J. Documentation*, **29**, 85–106 (1973).

Fromm, E., "Thoughts on Bureaucracy," *Management Sci.* (B Series), **16**, 699–705 (1970).

Fussler, H. H., and J. L. Simon, *Patterns in the Use of Books in a Large Research Library*, Univ. of Chicago Press, Chicago, 1969.

Glover, F., and D. Klingman, "Mathematical Programming Models and Methods for the Journal Selection Problem," *Lib. Quart.*, **42**, 43–59 (1972).

Goffman, W., "A Mathematical Method for Analyzing the Growth of a Scientific Discipline," *J. Assoc. Computing Machinery*, **18**, 173–185 (1971).

Goyal, S. K., "Application of Operation Research to Problems of Determining Appropriate Loan Periods for Periodicals," *Libri*, **20**, 94–100 (1970).

Gupta, S. M., and A. Ravindran, "Optimal Storage of Books by Size: An Operations Research Approach," *J. Amer. Soc. Inform. Sci.*, **25**, 354–357 (1974).

Halbert, M., and R. Ackoff, "An Operations Research Study of the Dissemination of Scientific Information," Case Institute of Technology, Cleveland, Ohio, NTIS PB 144 328, 1960.

Hamburg, M., L. E. Ramist, and M. R. W. Bommer, "Library Objectives and Performance Measures and Their Use in Decision-making," *Lib. Quart.*, **42**, 107–128 (1972).

Hamburg, M., R. C. Clelland, M. R. W. Bommer, L. E. Ramist, and R. M. Whitfield, *Library Planning and Decision-Making Systems*, MIT Press, Cambridge, Mass., 1974.

Hayes, R. M., "Library Systems Analysis," in *Data Processing in Public and University Libraries* (J. Harvey, ed.), Spartan Books, Washington, D.C., 1966, pp. 5–20.

Heimnritz, F. J., "Quantitative Management in Libraries, *College Research Lib.*, **31**, 232–238 (1970).

Jain, A. K., "Sampling and Data Collection Methods for a Book Use Study," *Lib. Quart.*, **39**, 245–252 (1969).

Jain, A. K., F. F. Leimkuhler, and V. L. Anderson, "A Statistical Model of Book Use and Its Application to the Book Storage Problem," *J. Amer. Statistical Assoc.*, **64**, 1211–1224 (1969).

Johns Hopkins University, "An Operations Research and Systems Engineering Study of a University Library," Baltimore, Md., 1968; ERIC ED 027 926, NTIS PB 168 137, and PB 182 834.

Kendall, M. G., "The Bibliography of Operational Research," *Operational Res. Quart.*, **11**, 31–36 (1960).

Kilgour, F. G., "Recorded Use of Books in the Yale Medical Library," *Amer. Documentation*, **12**, 266–269 (1969).

Knight, D. M., and E. S. Nourse. *Libraries at Large*, Bowker, New York, 1969.

Kochen, M., and B. Segur, "Effects of Catalog Volume at the Library of Congress on the Total Catalog Costs of American Research Libraries," *J. Amer. Soc. Inform. Sci.*, **21**, 133–139 (1970).

Korfhage, R. R., V. N. Bhat, and R. E. Nance, "Graph Models for Library Information Networks," *Lib. Quart.*, **42**, 31–42 (1972).

Kozachkov, L. S., and L. A. Khursin, "The Basic Probability Distribution in Information Flow Systems," *Nauchno-technicheskaya informatsiya*, Ser. 2, 3–12 (1968).

Kraft, D. H., "A Comment on the Morse–Elston Model of Probabilistic Obsolescence," *Operations Res.*, **18**, 1228–1233 (1970).

Kraft, D. H., and T. W. Hill, Jr., "A Journal Selection Model and Its Implications for Librarians," *Inform. Storage Retrieval*, **9**, 1–11 (1973).

Kraft, D. H., and T. W. Hill, Jr., "The Journal Selection Problem in a University Library System," *Management Sci.*, **19**, 613–626 (1973).

Lancaster, F. W., ed., "Systems Design and Analysis for Libraries," *Lib. Trends*, **21**(4), (1973).

Leimkuhler, F. F., "The Bradford Distribution," *J. Documentation*, **23**, 197–207 (1967).

Leimkuhler, F. F., "Large Scale Library Systems," *Lib. Trends*, **21**, 575–586 (1973).

Leimkuhler, F. F., "Library Operations Research," *Lib. Quart.*, **42**, 84–96 (1972).

Leimkuhler, F. F., "A Literature Search and File Organization Model," *Amer. Documentation*, **19**, 131–136 (1968).

Leimkuhler, F. F., and M. D. Cooper, "Analytical Models for Library Planning," *J. Amer. Soc. Inform. Sci.*, **22**, 390–398 (1971).

Leimkuhler, F. F., and J. G. Cox, "Compact Book Storage in Libraries," *Operations Res.*, **12**, 419–427 (1964).

Licklider, J. C. R., *Libraries of the Future*, MIT Press, Cambridge, Mass., 1965.

Linvill, W. K., "The Changes in Systems Modeling Required by Societal Analysis," in *Proceedings of the International Symposium on Systems Engineering and Analysis*, Purdue Univ., Lafayette, Ind., October 1972, Vol. 1, pp. 75–84.

Lister, W. C., "Least Cost Decision Rules for the Selection of Library Materials," unpublished doctoral dissertation, Purdue Univ., Lafayette, Ind., 1967, ERIC ED 027 916.

Lutz, R. P., "Costing Information Services," *Bull. Med. Lib. Assoc.*, **59**, 254–261 (1971).

Mackenzie, A. G., "Systems Analysis as a Decision-making Tool for the Library Manager," *Lib. Trends*, **21**(4), 493–504 (1973).

Mackenzie, A. G., and M. K. Buckland, "Operational Research," in *British Librarianship and Information Science* (A. H. Whatley, ed.), Library Association, London, 1972.

Mann, S. H., "Least Cost Decision Rules for Dynamic Library Management," *Inform. Storage Retrieval*, **7**, 111–121 (1971).

Martyn, J., and B. C. Vickery, "The Complexity of Modeling of Information Systems," *J. Documentation*, **26**, 204–220 (1970).

McLuhan, M., *Understanding Media: The Extension of Man*, McGraw-Hill, New York, 1964.

Meier, R. L., "Efficiency Criteria for the Operation of Large Libraries," *Lib. Quart.*, **31**, 215–234 (1961).

Miller, D. W., and M. K. Starr, *The Structure of Human Decisions*, Prentice-Hall, Englewood Cliffs, N.J., 1967.

Morley, R. M., "Maximizing the Benefit from Library Resources," University of Lancaster Library Occasional Paper No. 3, Lancaster, England, 1969.

Morse, P. M., *Library Effectiveness: A Systems Approach*, MIT Press, Cambridge, Mass., 1968.

Morse, P. M., "Measures of Library Effectiveness," *Lib. Quart.*, **42**, 15–30 (1972).

Morse, P. M., "Optimal Linear Ordering of Information Items," *Operations Res.*, **20**, 741–751 (1972).

Morse, P. M., "Probabilistic Models for Library Operations," in Minutes of the 63rd Meeting, Association of Research Libraries, 1964, pp. 9–19.

Morse, P. M., "Search Theory and Browsing," *Lib. Quart.*, **40**, 391–408 (1970).

Morse, P. M., and C. Elston, "A Probabilistic Model for Obsolescence," *Operations Res.*, **17**, 36–47 (1969).

Nance, R. E., "An Analytical Model of a Library Network," *J. Amer. Soc. Inform. Sci.*, **21**, 58–66 (1970).

Nance, R. E., and N. R. Baker, "The Use of Simulation in Studying Information Storage and Retrieval," *Amer. Documentation*, **19**, 363–370 (1968).

Naranan, S., "Power Law Relations in Science Bibliography—A Self-consistent Interpretation," *J. Documentation*, **27**, 83–97 (1971).

National Advisory Commission on Libraries, *On the Economics of Library Operation*, Mathematica, Princeton, N.J., 1967.

National Science Foundation, "Improved Dissemination and Use of Scientific and Technical Information," Office of Science Information Program Solicitation No. NSF 74-38, Washington, D.C., 1974.

Newhouse, J. P., and A. J. Alexander, "An Economic Analysis of Public Library Service," RAND Corp., Santa Monica, Calif., 1972.

Oliver, M. R., "The Effect of Growth on the Obsolescence of Semiconductor Physics Literature," *J. Documentation*, **27**, 11–17 (1971).

O'Neill, E. T., "Sampling University Library Collections," *College Research Lib.*, **27**, 450–454 (1964).

Orr, R. H., "Measuring the Goodness of Library Services: A General Framework for Considering Quantitative Measures," *J. Documentation*, **24**, 315–332 (1973).

Pratt, L., "Analysis of Library Systems: A Bibliography," *Special Lib.*, **55**, 688–695 (1964).

Raffel, J. A., and R. Shisko, *Systematic Analysis of University Libraries: An Application of Cost-Benefit Analysis to the M.I.T. Libraries*, MIT Press, Cambridge, Mass., 1969.

Rider, F., *The Scholar and the Future of the Research Library*, Hadham Press, New York, 1944.

Rouse, W. B., "Applications of Operations Research Techniques in Tufts University Libraries," Tufts Univ., College of Engineering, Boston, 1973.

Rouse, W. B., "Circulation Dynamics: A Planning Model," *J. Amer. Soc. Inform. Sci.*, **25**, 358–363 (1974).

Rouse, W. B., "Optimal Resource Allocation in Library Systems," *J. Amer. Soc. Inform. Sci.*, **26**, 157–165 (1975).

Rouse, W. B., and S. H. Rouse, "Use of a Librarian/Consultant Team to Study Library Operations," *College Research Lib.*, **34**, 242–248 (1973).

Roy, R. H., *The Administrative Process*, Johns Hopkins, Baltimore, Md., 1958.

Rzasa, P. V., and N. R. Baker, "Measures of Effectiveness for a University Library," *J. Amer. Soc. Inform. Sci.*, **23**, 248–253 (1972).

Saracevic, T., ed., *Introduction to Information Science*, Bowker, New York, 1970.

Saxena, S. K., "Compact Storage of Books in Open-Shelf Libraries Where Book Height Follows a Compound Type of Truncated Double Exponential Distribution," *Opsearch*, **3**, 157–167 (1967).

Shaw, R. R., "Scientific Management in the Library," *Wilson Lib. Bull.*, **21**, 349–352 (January 1947).

Slamecka, V., "A Selective Bibliography on Library Operations Research," *Lib. Quart.*, **42**, 152–158 (1972).

Solberg, J. J., "Principles of System Modeling," in *Proceedings of the International Symposium on System Engineering and Analysis*, Purdue Univ., Lafayette, Ind., October 1972, Vol. I, pp. 67–74.

Trueswell, R. W., "Article Use and Its Relation to Individual User Satisfaction," *College Research Lib.*, **31**, 239–243 (1970).

Trueswell, R. W., "User Circulation Satisfaction vs. Size of Holdings at Three Academic Libraries," *College Research Lib.*, **30**, 204–213 (1969).

Vickery, B. C., "Bradford's Law of Scattering," *J. Documentation*, **4**, 198–203 (1948).

Vickery, B. C., "Statistics of Scientific and Technical Articles," *J. Documentation*, **26**, 53–54 (1970).

Wagner, H. M., *Principles of Operations Research*, Prentice-Hall, Englewood Cliffs, N.J., 1969.

Webster, D., "Library Policies: Analysis, Formulation and Use in Academic Institutions," Office of Management Studies Occasional Paper No. 2, Association for Research Libraries, Washington, D.C., November 1972.

Webster, D., "Planning Aids for the University Library," Office of Management Studies Occasional Paper No. 1, Association for Research Libraries, Washington, D.C., December 1971.

Weinberg, C. B., "The University Library: Analysis and Proposals," *Management Sci.*, **21**, 130–140 (1974).

Wilkinson, E. A., "The Ambiguity of Bradford's Law," *J. Documentation*, **28**, 122–130 (1972).

Wilson, P. C., *Two Kinds of Power: An Essay on Bibliographical Control*, Univ. of California Press, Berkeley, 1968.

F. F. LEIMKUHLER

ORAL HISTORY

Oral history is primary source material obtained by recording the spoken words—generally by means of planned, tape-recorded interviews—of persons deemed to harbor hitherto unavailable information worth preserving.

Oral history as an organized activity dates only from 1948, when Professor Allan Nevins launched "The Oral History Project" at Columbia University (Figure 1). Yet the essence of the idea is as old as history itself. On the premise that it stems from the oral tradition (that body of lore by which one tribe or family knows of its past through stories repeated from one generation to the next), some scholars would argue, indeed, that it predates history. Herodotus, called by Cicero "the father of history," employed oral history in gathering information for his account of the Persian Wars in the fifth century B.C. Like most of his successors, however, Herodotus did not keep a verbatim record of what his informants told him, or if he did, it was lost. The purpose of oral history is to obtain and preserve such a record. Edmund Spenser expressed beautifully the thought that motivates the work when he wrote these lines in *The Ruines of Time* (A.D. 1591):

For deeds do die, how ever nobile donne,
And thoughts of men do as themselves decay,
But wise wordes taught in numbers for to runne,
Recorded by the Muses, live for ay.

The modern Muses, as oral historians would have it, are men and women armed with tape recorders, in quest of firsthand knowledge that would otherwise decay. This they would capture, not for their own benefit, but "for ay"—for libraries or other repositories to hold for the benefit of scholars of this and succeeding generations.

Oral History as Source Material

The verbatim record of what oral historians obtain is thus in one respect unique, in comparison with other forms of primary source materials. It is deliberately created solely for historical purposes. It can capture and preserve life stories that would otherwise be lost, by eliciting oral autobiographies that may run to a thousand or more pages. It can fill in the lacunae in one field of learning after another, by eliciting testimony from many on a single topic. It can convey personality, explain motivation, reveal inner thoughts and perceptions—serving scholars in much the same way as private letters and diaries. An oral history memoir is based on recall, and thus lacks the immediacy of these, but it can be fully as intimate, more reflective, and, if the questioner knows what to ask, quite as useful to the researcher. Obviously it is also quite as hazardous for the researcher, since memory is fallible, ego distorts, and contradictions sometimes go unresolved. Yet problems

FIGURE 1. *Allan Nevins in the Oral History office at Columbia University, 1958.*

of evaluation are not markedly different from those inherent in the use of letters, diaries, and other primary sources. With *caveat emptor* ever in mind, the scholar must test the evidence in an oral history memoir for internal consistency and, whenever possible, by corroboration from other sources, often including the oral history memoirs of others on the same topic.

Inviting the comparison with private letters, diaries, and other intimate documents is doubly apropos, for it is the gradual disappearance of these in our own time that is most often advanced as the reason for the remarkable growth of oral history in the second half of this century. As early as 1950, Nevins pointed out that the telephone, the automobile, and the airliner, by enabling people to "contact" one another as readily as that expression suggests, were displacing the confidential letters of old, thereby robbing future historians of incalculable treasure (*1*). Nevins was bold enough to suggest that oral history might help fill the void. If that seemed visionary at the time, the last quarter century has given it plausibility. The age of the holographic document has receded still further, jets and freeways and television have made further incursions on writing time, and oral history moves apace. The tape recorder has become omnipresent, there are oral history projects in all states of the Union and in many foreign lands, and professional associations flourish here and abroad. The oral history movement may be perceived as a conscious effort to utilize technology—not only the tape recorder, but (as we shall see) microforms, the computer, and other tools of the age—to counter the inroads of technology that Nevins deplored.

Form and Substance

SUBSTANCE

In range of subject matter, particularly as it has been developing in the United States in recent years, oral history appears to know no bounds. Familiar published examples of the genre run from Theodore Rosengarten's moving evocation of a Black Alabama sharecropper's life story, *All God's Dangers*, to passages in Forrest Pogue's majestic four-volume life of General George Marshall; from Studs Terkel's interviewees talking about their jobs in *Working* to Merle Miller's version of his taped sessions with Harry Truman in *Plain Speaking;* from quotations in William Lynwood Montell's minor classic in folklore, *The Saga of Coe Ridge,* to Saul Benison's in polio research, *Tom Rivers: A Life in Science and Medicine.* If the oral history components of these books have a common bond, it is the authenticity of their firsthand testimony, delivered with spontaneity. Each, as the vernacular would have it, "tells it like it is" (or was) with a candor that is the forte of good oral history, a candor emanating from the rapport which the interlocutor, each in his way, was able to establish with the respondent.

More commonly, oral history remains unpublished, awaiting researchers in libraries. Its votaries range over terrain even more varied than these titles suggest. They include New Left scholars interviewing steel workers in Gary, Indiana; law students prodding the memories of eminent jurists in New York, or of those who knew Chief Justice Earl Warren in California; social historians exploring the Jewish community of Columbus, Ohio, or of mountain people in the piney woods of Georgia; musicologists on the trail of those who remember Charles Ives or Scott Joplin or Art Tatum; and historians pursuing institutional history, be it a study of the packaging industry, of unionism in the needle trades, of the development of the computer, or of NASA. Other projects focus upon an epoch, like the occupation of Japan; an episode, like the Memorial Day Massacre during the "Little Steel" strike of 1937; or a movement, like the suffragists, or the Civil Rights Movement of the 1960s. There are oral history projects on every branch of the armed services, and on each presidential administration beginning with Herbert Hoover's, the exception at this writing being Richard M. Nixon's, although the tapes that led to his undoing presumably will survive for historians of later generations.

In substance, then, oral history bids fair to reflect the myriad interests of a pluralistic society—its ethnic groups, its cultural pursuits, its political leadership, its institutions and occupational groups—so far as limited resources but apparently limitless enthusiasm permits.

FORM: TAPES VERSUS TRANSCRIPTS

Is the end product of oral history a tape or a transcript? For some local projects in the United States and Canada, and for most in Great Britain, the oral history process begins and ends with the tape. A written summary or some other finding aid may be prepared to guide listeners, and that is all. Some 70% of oral history centers in the United States, and many elsewhere, however, transcribe their tapes into typescript (*2*). The prevailing practice is to persuade the oral author (a more precise designation than subject, respondent, narrator, memoirist, or interviewee, all of which are also employed) to verify the result, correcting the text for clarity and accuracy rather than for style. The edited transcript—completely retyped by some programs, by others left with its handwritten changes—then becomes the true end product. Indexed and cataloged, the final version takes its place in an oral history repository, subject to whatever restriction upon access and use the oral author imposes.

Tapes versus transcripts has been a subject of lively debate among those engaged in oral history, one that is gradually moving toward resolution. Protagonists of the tape contend that this is the true primary source. Nuances of voice, they assert, must be heard rather than left to the reader to infer from a transcript, which cannot accurately convey accent, inflection, emphasis, or manner. Those who prefer the transcript emphasize the value to the scholar of knowing that the oral author has read and corrected what he said, a process that turns what might be dismissed as hearsay into a document that has much of the standing of a legal deposition. As to nuances lost in the transcript, they hold this a small price to pay for the assurance of verification. One cannot read 20 pages of transcript, they contend, without comprehending the tone of the oral author, since this is conveyed by style, and in any case is frequently immaterial to the researcher's purpose.

The debate is subsiding in the United States largely because of the overwhelming preference of users for transcripts, calls for which exceed calls for tape in some of the larger oral history collections by ratios of a thousand to one and higher. This is not so much because those who favor the transcript have the better of the argument on theoretical grounds as because of practical convenience: to most researchers, a written document that carries page numbers, and an index to them, is vastly preferable. Whatever they wish to copy or paraphrase is before them in black and white. Tapes, no matter how carefully indexed, are awkward to use, particularly if the memoir is a massive one. Folklorists, linguists, and musicologists, nonetheless, find them indispensable.

A consensus emerges: tapes are more suitable for some purposes, transcripts for others; but so far as possible both should be preserved, allowing researchers to choose for themselves. Future generations may prove more aurally oriented.

The Oral History Movement

ANTECEDENTS

The modern roots of oral history antedate both the term itself and Allan Nevins's efforts. Several projects generated oral history (though the term was not applied) under New Deal auspices in the 1930s. One, the first of two endeavors to collect the reminiscences of former slaves, was launched by Lawrence D. Reddick under a Works Progress Administration grant in Kentucky, Indiana, and adjacent states, 1934–35. Others, done in the late 1930s for the Federal Writers Project in Georgia and other southern states, sought out Blacks and poor whites in rural areas for interviews that might enrich the state guides the agency was preparing, but this material was also perceived as having enduring archival value (*3*). Like the slave narratives, these manually recorded interviews were largely forgotten in the National Archives until interest in Black studies combined with the oral history movement to resuscitate them decades later.

As for the term oral history, it appears to have been coined by a dissolute member of the Greenwich Village literati named Joe Gould, Harvard graduate, friend of the poet Maxwell Bodenheim and self-styled "Professor Sea Gull." Gould claimed to be compiling "an Oral History of Our Time," according to a *New Yorker* profile in 1942; a sequel proved this apocryphal (*4*). Gould named an activity he may or may not have pursued, giving the world a misnomer now firmly embedded in the language. Suggested alternatives like oral documentation and living history have not survived the hour.

THE BEGINNINGS

The term may have slipped into Allan Nevins's vocabulary through the *New Yorker*, but his own thoughts about an ongoing interviewing effort for the benefit of future scholars germinated as far back as 1931. Engrossed in his biography of Grover Cleveland, he lamented that no one had had the wit to interview Cleveland or his associates, most of whom died without leaving historians a legacy of any kind. He discussed with friends, among them Adolf Berle and Dean Edwin F. Gay of the Harvard Business School, how the idea might be implemented, and in 1938 issued the first call for it in his preface to *The Gateway to History:*

> We have agencies aplenty to seek out the papers of men long dead. But we have only the most scattered and haphazard agencies for obtaining a little of the immense mass of information about the more recent American past—the past of the last half century—which might come fresh and direct from men once prominent in politics, in business, in the professions, and in other fields: information that every obituary column shows to be perishing.

A decade passed before Nevins found the means to implement such an agency. After years of gentle persuasion on his part, his wealthy friend Frederic Bancroft, a historian who held one of Columbia's earliest Ph.Ds (1885) left the university $1½ million for the acquisition of new materials in American history (*5*). A small portion of the income (initially but $3,000) helped start the work.

The beginnings were hardly auspicious. Nevins had no recording device. Limited by a skeptical faculty committee to New York City affairs, he took along a graduate student named Dean Albertson to help on the first interview, one of a series with a seasoned civic leader named George McAneny. On May 18, 1948, in the McAneny living room at 120 East 75th Street, Albertson took notes in longhand as Nevins evoked a stream of reminiscence from his subject. The young man then went home to type up a rough draft of the proceedings as best he could from his notes, and the experiment was suspended until fall (*6*). Toward the end of 1948, three more memoirs had been obtained in this laborious fashion, when the pioneers of oral history got wind of an electronic device that would enable them to capture every word, the wire recorder. Judge Learned Hand was the first to speak in the presence of one of these, January 21, 1949. The process changed almost overnight. Transcribers were installed in a basement room of Butler Library, tape recorders replaced the awkward wire machines after a year or so, the horizon expanded to include national affairs, and production began in earnest (Figure 2).

Acquiring personal papers to complement an oral history memoir soon proved a fringe benefit, sometimes far more. Nevins's interviews with Herbert Lehman (Figure 3) led ultimately to the gift not only of his papers, but of a model facility to house them in Columbia's School of International Affairs Library, with its own curator, catalog, and seminar rooms (Figure 4).

Alongside the lengthy oral autobiographies Nevins favored from the first, there soon developed a second kind of oral history—the special project. It proved fruitful. The first of these bloomed when a national organization of radio pioneers called "The Twenty-Year Club" (later "Broadcast Pioneers") helped fund an effort, 1950–1952, on the early years of broadcasting. Nevins enlisted Frank Ernest Hill for work that generated over 4,000 pages of memoirs by radio's early announcers, program directors, technicians, and executives. A second one, launched a few months later, gave oral history its first foothold elsewhere—at the Ford Archives in Dearborn, Michigan. This was by way of preliminary research for the three-volume history Nevins and Hill ultimately produced on the Ford Motor Company, and it grew into the largest of industrial oral history projects. Owen Bombard, recruited from the Columbia office, saw to the interviewing of 434 persons who descanted some 26,000 pages about Henry Ford and his empire. A third

FIGURE 2. *Transcribers at work in Butler Library, 1953.*

special project, conducted by Nevins and Hill in 1951, produced a wealth of material on the history of oil wildcatting in Texas, and presumably was responsible for alerting scholars at the University of Texas to the potentialities. Their project on the oil industry, begun in 1952 by William Owens at the E. C. Barker Texas History Center, appears to have been the first such by another university. The Forest History Society, under Elwood Maunder, began its oral history program the same year. The first multipurpose project after Columbia's began 2 years later, in 1954, when the Regional Oral History Office of the University of California, Berkeley, was launched. UCLA began its own in 1959 (7).

Growth remained lethargic through the 1950s, as Figure 5 shows. In part this was because the early emphasis on the right of an oral author to close his entire memoir (rather than the sensitive parts only, as later) left oral history's pioneers with substantial holdings "in the deep freeze," as Albertson put it. Nevins, who retired in 1958, had been in no hurry to make them widely known in any case, for he conceived of the work as primarily for future generations. As for the other projects then in existence, most were wholly absorbed in creating: dissemination would come years later. (An exception was the Forest History project, which published excerpts of its oral histories in its journal, *Forest History*, from time to time.)

FIGURE 3. *Nevins interviewing Herbert Lehman, 1949, for a memoir that later grew into a biography.*

GROWTH IN THE 1960s

The explosive growth that ensued in the following decade cannot be wholly explained. A trickle of articles about oral history in learned journals and the popular press, which grew to a rivulet by the mid-1960s (Figure 6), undoubtedly helped. Nor was it lost on the academic world that such scholars as James MacGregor Burns, Frank Freidel, George F. Kennan, and Arthur M. Schlesinger, Jr., by the late 1950s were drawing upon oral history in their published work. Other factors include the phenomenal development of the portable tape recorder in the course of the 1960s, culminating in the cassette.

The appearance, in 1960, of the first published catalog may be noted: a slender volume titled *The Oral History Collection of Columbia University*, carrying brief descriptions of holdings then totaling 130,000 pages. Significantly, it was arranged like the catalog of a manuscript collection, a model that has been followed since. In 1961 came the first printed annual report, from the same office, both publications replacing multigraphed efforts of small circulation in the late 1950s. These reports, more widely circulated each year, served to spread the word. Scholarly traffic and inquiries from other institutions accelerated apace, and the Columbia office began

FIGURE 4. *Seminar room in the Herbert Lehman Suite, Columbia, 1974.*

a file on projects elsewhere. Its 1964 report provided brief information about oral history work in progress at the American Institute of Physics, Brandeis, Claremont Graduate School, Cornell University, Harvard (with which the JFK project was then affiliated), the Hollywood Museum, the George C. Marshall Research Library, Princeton (then beginning its project on John Foster Dulles), the University of Michigan (harboring the United Auto Workers project, begun in 1959 and shared with Wayne State), the Truman Library (first of the Presidential Libraries to enter the field, 1961), and Tulane (where the New Orleans Jazz Archive began in 1958), in addition to projects already mentioned. A survey in the wake of this resulted in *Oral History in the United States,* a state-by-state listing of 89 projects, many still in embryo, as part of Columbia's 1965 report. The "veritable movement" cited in the second edition of its catalog (1964) had indeed materialized, but it was apparent from the data that growth was not along the lines the original office had anticipated. "Oral history holds potentialities that may well give an office like ours a place in most great universities of the future," its 1961 report had ventured. Instead, museums, historical societies, corporations, labor unions, church groups, and libraries were intermingled with colleges and universities large and small, most of them engaged in a single special project as opposed to the few (notably Cornell and several California institutions) making a broad acquisitions effort on the Columbia model (Table 1).

Was there sufficient common interest among these organizations to form a viable association? The collector of the information (and writer of this article) was doubtful. Nevins, then at the Huntington Library in San Marino, was convinced

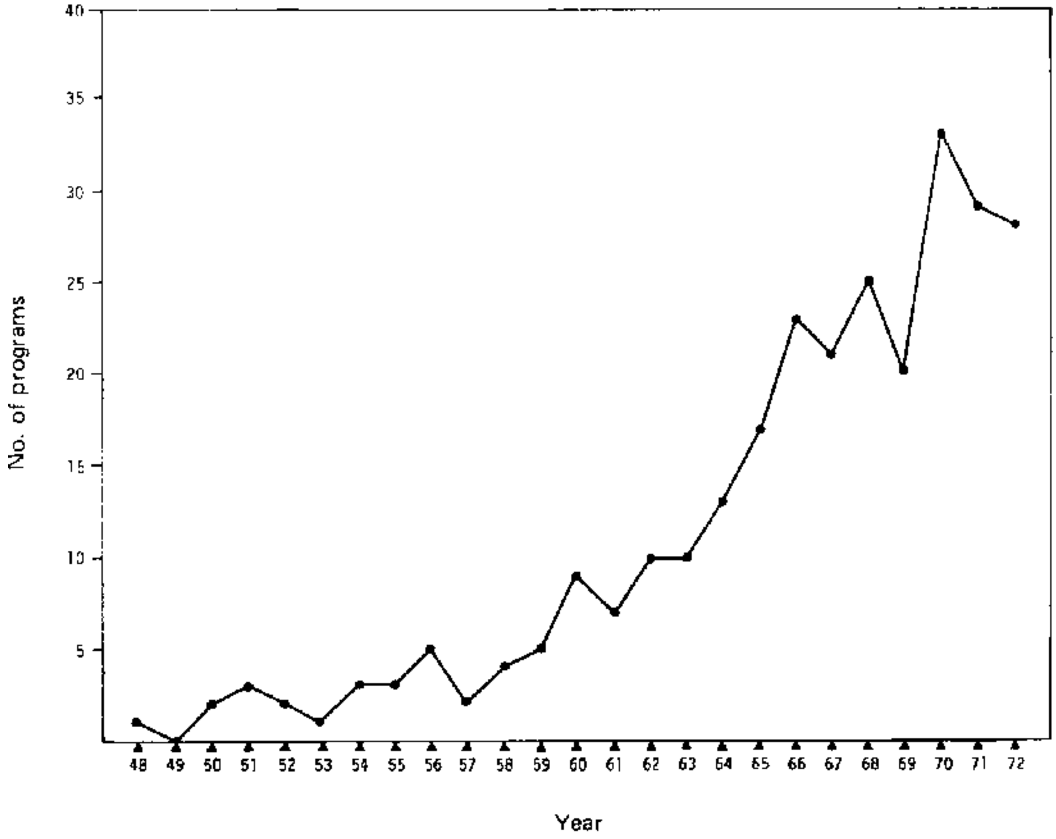


FIGURE 5. *Oral history programs in the United States, by year of founding. The data for this chart derive from* Oral History Collections *(Bowker, 1975).*

there was, and having failed to persuade the writer to call a meeting, he turned to James V. Mink, then in charge of oral history at UCLA. Mink had just such a meeting in mind.

THE ORAL HISTORY ASSOCIATION

With the promise of Allan Nevins as a speaker and the Columbia report as an invitation list, Mink attracted 77 persons to Lake Arrowhead, UCLA's conference facility in the San Bernardino mountains, in September 1966, for 3 days of wide-ranging discussion. It concluded with a resolve to meet again the following year and to form an association. Mink headed a steering committee which accomplished this at the Arden House meeting organized by the writer in 1967. The Oral History Association (OHA) has since published a quarterly newsletter; a *Bibliography on Oral History* (the fourth edition, edited by Manfred Waserman of the National Library of Medicine, appeared in 1975); a directory; and an annual, *The Oral History Review*. Its extraordinary growth in membership is charted in Figure 7.

OHA has helped to alert the American Library Association, the Society of American Archivists, the Organization of American Historians, and other professional groups to the work, recruiting panel discussions on oral history for their

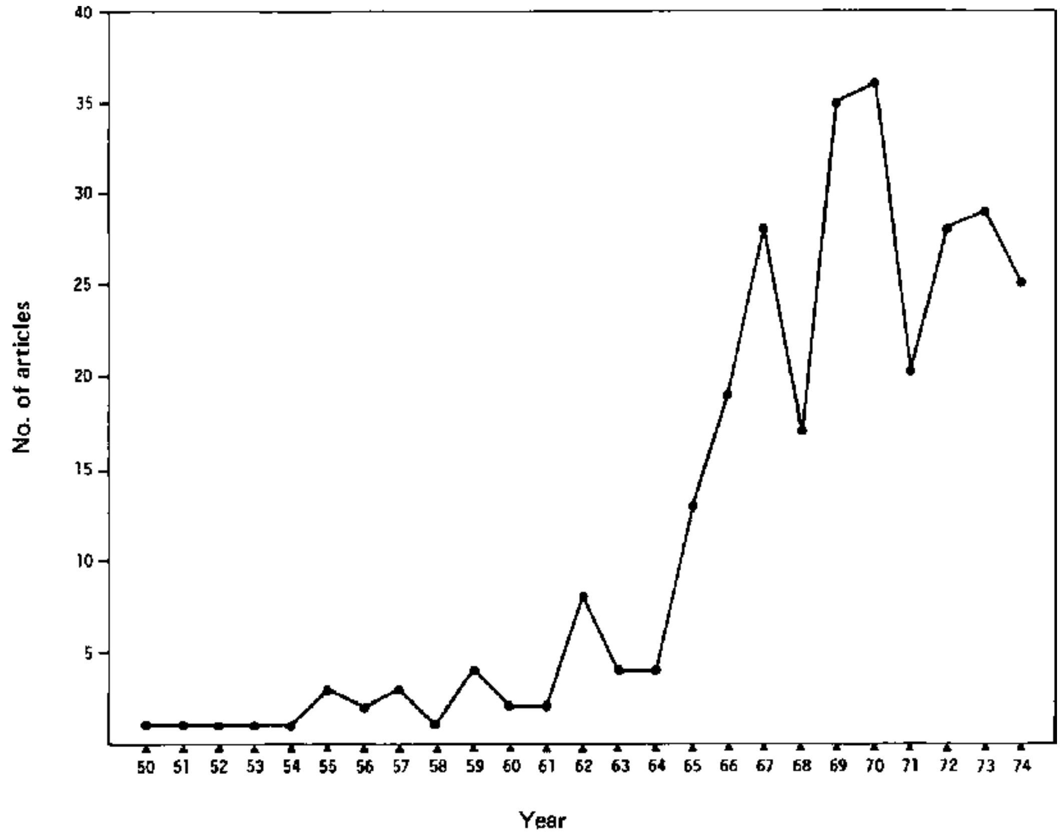


FIGURE 6. *Articles on oral history, by year of publication. Data derived from* Bibliography on Oral History, *edited by Manfred J. Waserman (Oral History Association, New York, 1975).*

meetings, staging exhibits at them, staffing workshops for them. Its own meetings, held in the fall in places remote from urban distraction—in 1974 at Jackson Hole, Wyoming, in 1975 near Asheville, North Carolina, in 1976 at Le Chateau Montebello in Quebec—from the first achieved an ambiance uncommon to academic

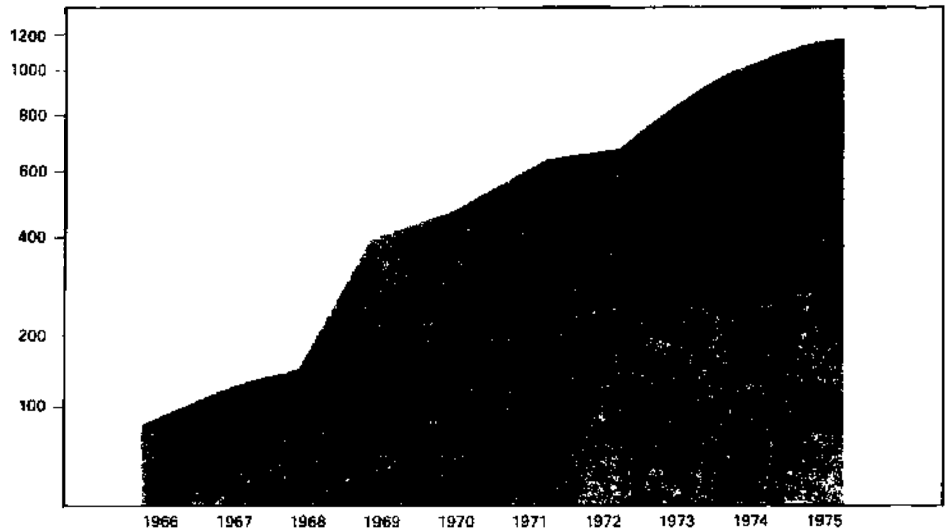


FIGURE 7. *Membership of the Oral History Association; geometric scale. Source: issues of the* Oral History Newsletter, *1967–1974.*

TABLE 1

Oral History Centers in the United States, by Institutional Affiliation, 1973[a]

Type of affiliation	No. of centers
Universities (public, 75; independent, 33)	108
Public libraries (city, 26; county, 15; state, 7)	48
Colleges (independent, 31; public, 16)	47
Professional, ethnic, other special interest societies	29
Historical societies, local and state	25
Federal agencies	18
Museums, hospitals, church groups	12
Private collectors	5
Corporations	4
Medical centers	3
Alumni associations	2
Bookmobile	1
Unclassified	14
TOTAL	316

[a] From *Oral History*, annual report: 1975, Columbia University, p. 4.

gatherings, emanating in part from a sense of creative pioneering shared by all in the field, in part from a policy of enlisting speakers outside of academe (e.g., Barbara Tuchman, Walter Lord, Alden Whitman, Daniel Schorr) as well as within it to broaden perspectives, and in part from its attraction for younger scholars. Beginning with the Fifth National Colloquium at Asilomar, California, in 1970, OHA has run workshops for initiates each year prior to its colloquium. They deal with topics ranging from the ethics of oral history interviewing, as set forth in OHA's "Goals and Guidelines," to interviewing techniques, final processing, and control of access, generally interspersed with lively debate.

Toward Wider Dissemination

The rapidity of oral history's growth led to concern among its practitioners as to how all the riches gathered were to be made widely known and put at the disposal of scholars. There has been significant progress in this direction in the 1970s. Through the OHA, the *National Union Catalogue of Manuscript Collections* (NUCMC), published by the Library of Congress, arranged to include oral history collections that met its criteria as to size, beginning with the 1970 edition. A directory of all known projects, *Oral History in the United States* (compiled by Gary Shumway of the California State University at Fullerton and edited and published by Columbia in 1971 on behalf of OHA), provided a state-by-state guide to 230 collections, with notes on their contents and a name and subject index. It is in some 3,000 libraries in this country and abroad.

This was followed in 1975 by a far more ambitious directory, *Oral History Collections*, edited by Alan Meckler and Ruth McMullin and published by R. R.

Bowker. It listed in a single name and subject index the individual memoirs held in many repositories, as well as many of the topics covered in subject collections. A centers section gave data about 316 oral history centers in the U.S. Though far from complete, the guide broke a path toward comprehensive coverage in future editions.

A 1970 article on oral history observed that few projects had published descriptive lists of their holdings as yet (*8*). Here, too, progress has been rapid. Study of the Bowker directory shows that by 1973 (when the data were collected) some 45 oral history centers had catalogs of their holdings (in a few instances in card rather than book form). Eight more were going to press. The third edition of Columbia's catalog, published the same year and set from computer tape to facilitate subsequent editions, carried subject and biographical indexes. Finding aids of this kind are, of course, indispensable to the researcher, for no union list can supply the detailed information they contain. The appearance of the Bowker directory is expected to stimulate such catalogs; without one, no oral history center can be properly represented in subsequent editions of this or of NUCMC.

ORAL HISTORY AND MICROFORMS

A development of potentially greater significance was signaled by the establishment of The New York Times Oral History Program in 1970, whereby selected "open" transcripts are made available to libraries in both microfilm and microfiche, and to individual scholars on fiches. This came in response to complaints that oral history was both inaccessible and difficult to use because of the prohibition against copying that most centers enforce, to protect the common-law copyright of their oral authors. By obtaining assignments of copyright from the authors or their executors, centers thenceforth could look to wider distribution of substantial parts of their collections by joining the program (Figure 8).

By 1976, 20 oral history collections in the United States and the largest one abroad, that at Hebrew University in Jerusalem, had done so. They are included in the annual *Guide to Microforms in Print* as well as in the Library of Congress Cataloging in Publication program, making for a further increase in accessibility. Another advance was in the immediate offing: computerized name and topical indexes of some of these collections, following the general style of The New York Times Index. The first of these, covering the 200 memoirs in "Part One" of the Columbia collection on microfilm, was scheduled to appear in 1976.

Micropublication, of course, leaves "permission required" or "closed" memoirs untouched, but since all such restrictions end in due course, it appears likely that the most useful oral history transcripts in many fields will be available in microform in time for the next generation of scholars, accompanied by sophisticated finding aids.

MANUALS AND GUIDES

For all of the literature devoted to interviewing of various kinds, there was no suitable guide to the mysteries of oral history work for nearly two decades. The

FIGURE 8. *Chester M. Lewis of The New York Times Oral History Program presents a set of microfiche made from transcripts in the Columbia Oral History Collection to Louis M. Starr, its director, while Elizabeth B. Mason, associate director, looks on. In this form, "open" memoirs are shared with other libraries and scholars. Four hundred memoirs totaling 100,000 pages were included by June 1975, when this photo was taken.*

need was met partially, after the founding of OHA, by its printed proceedings, a series that provided hundreds of novices with their introduction to oral history. (Now out of print, the series has been micropublished by The New York Times Oral History Program. *The Oral History Review* took the place of these as the OHA's annual in 1973.)

Guides proliferated in due course. Credit for the first one belongs to William G. Tyrrell of the New York State Historical Commission, who in 1966 wrote *Tape Recording Local History*, a 12-page pamphlet issued by the American Association for State and Local History. This was followed in 1969 by *Oral History for the Local Historical Society*, by Willa K. Baum of the University of California's Regional Oral History Office, a work that has been called the Dr. Spock of its field. Concise and clearly written, its fourth edition (1974) met the need (title notwithstanding) well enough to have become assigned reading in graduate courses on the subject.

Both more elaborate and simpler guides have come since. *An Oral History*

Primer, by Gary L. Shumway and William G. Hartley, published by the Oral History Program of the California State University at Fullerton in 1973, proved useful to schools and to programs that rely on volunteer interviewers. *A Guide for Oral History Programs,* published the same year under the same auspices, set forth in detail the oral history process from funding to cataloging, as practiced by that institution. A similar volume, into which is woven an interesting history of the John F. Kennedy Oral History project, was written by William W. Moss of its staff and published by Praeger, New York, in 1974. Cullom Davis, Kathryn Back, and Kay MacLean of Sangamon State University in Springfield, Illinois, produced *From Tape to Type* as a guide for small institutions in 1975; and Joseph H. Cash (of the University of South Dakota) and associates wrote yet another, *The Practice of Oral History,* published by The New York Times Oral History Program the same year. None is likely to displace Mrs. Baum's work, with its nice sensitivity to the interests of volunteers on the one hand and to the basic needs for attainment of professional competence on the other. All served to push back the walls of ignorance about oral history.

ORAL HISTORY IN THE CLASSROOM

Oral history has impinged on the learning process in one way or another since its early years. William E. Leuchtenburg, Eric McKitrick, and others in the Columbia history department took to immersing their students in the Oral History Collection as a means of exposing them to the problems peculiar to it. Columbia's Oral History office, as Henry Steele Commager recalled in addressing the Second National Colloquium on Oral History, became "a kind of *Ecole des chartes* for the training of oral historians and oral archivists," but it remained for many years a very informal *école* featuring private tutoring and learning-by-doing. At the Third National Colloquium the following year, attention was given to classroom applications, but the consensus was that these remained largely unexplored. Saul Benison of the University of Cincinnati told of using oral history in lectures and assignments in a course on historiography. Charles Morrissey involved students at the University of Vermont in demonstration interviews, and Gary Shumway of California State put them to work on specific projects he was conducting. Harvey Kursh, a seventh and eighth grade teacher at Lakeland Middle School, New York, told of organizing his class to obtain an oral history interview, bringing history alive to students who had no interest in it hitherto. An OHA survey in 1974 showed sharply increasing use of all applications suggested in these models, on high school, college, and graduate levels.

Like archaeology, oral history is more than a tool and less than a discipline; yet one area in which significant progress has been made recently is in the teaching of oral history itself as a disciplined activity. Ground was broken by the University of California, Los Angeles, when it obtained a federal grant for a 2-week session on oral history techniques for librarians in July 1968. Some 20 students went through the whole process, from preparing for interviews to processing and submitting them. An intensive course in every aspect of the work began at Columbia on the graduate level in 1973 and has been oversubscribed every year since. Wendell Wray, a student in the first class, transplanted it with his own embellishments to the University of Pittsburgh's Library School the same year. Jacquelyn Dowd Hall installed a similar course at the University of North Carolina, Chapel Hill, also in 1973. The *école* Commager alluded to thus spread to several campuses, suggesting that the first professionally trained interviewers and program directors presently will replace oral history's early practitioners.

A departure by William Chafe and Lawrence Goodwyn at Duke University sought to train graduate students to unearth specifics relating to Black disenfranchisement and other aspects of Black life in the South, on the premise that this buried history could be exhumed only by exhaustive digging in published sources, followed by pinpoint interviewing. While the program was a modest one, with seven students in 1974, development of this methodology for "history-from-the-bottom-up" projects attracted wide interest (*9*).

Financing Oral History

"We begin with finances," Allan Nevins told the first OHA colloquium. "And sometimes we end without finances" (*10*). It was largely to help programs find funding that he urged they band together in the first place, yet in this area the OHA, up to 1976, had done little beyond promoting discussion. Oral history has been chronically underfinanced from the first. A survey by Adelaide Tusler of the UCLA office in 1967 showed only one-fifth of those responding had budgets of over $20,000 (*11*). Six years later data collected by Meckler and McMullin for *Oral History Collections* indicated a sharp increase in total expenditures for oral history, but the median for all centers providing figures fell in the $10–14,000 range. This was not enough to sustain an ongoing program without volunteer help. Volunteers, particularly as interviewers for local and regional projects, but also on occasion for some of the largest ones, have played an important role in the movement.

The cost of processing an hour of tape, from preliminary research through interviewing, transcribing, editing, indexing, and cataloging, runs from around $100 to as high as $500. This is because of wide variations in processing the material, and also in paying interviewers and transcribers. Projects employing salaried staff for the whole process, particularly if this includes elaborate editing and final-typing, obviously incur the highest costs. Those employing specialists on a per-hour basis fall in the lower ranges.

Where does the money come from? In most cases from the parent institution, the Tusler survey reported: the college, society, or other body with which the program is affiliated. Major university programs, however, have been funded largely by outside sources, public and private. Special projects, according to one study, produced 43% of all income for one major university program over a decade. These were underwritten by foundations, corporations, and individuals, as well as by various federal agencies on a "cost plus" basis, the "plus" going toward support of unsubsidized work. General support came also from foundations and from university sources, each amounting to about half the percentage from special projects. The balance came from catalog sales, royalties, and services (*12*). These proportions, derived from 1957–1967 data, have remained quite stable with the exception of income from royalties, which increased substantially after the introduction of microforms.

Oral History Abroad

A 1970 report on oral history suggested that the movement would become "worldwide in the 1970s" (*13*). "Worldwide" may prove too inclusive, but midway in the 1970s there are signs that, taken in sum, make it arguable.

In Britain, the Oral History Society took form in 1973, meets twice yearly, and issues its own journal. Limited largely to social historians—the government's Social Science Research Council funded its first conferences—it shows signs of broadening its base. Membership reached 300 by 1976. In Canada—where leadership has been provided by Leo La Clare of the Public Archives, together with William Langlois, head of an active regional project in Vancouver—an association was formed in 1974, bringing together programs of widely diverse interests. In Australia, Joan Campbell of La Trobe University drew 85 persons to a first oral history conference in 1974, saw to the publication of its proceedings, and held another that gave birth to an association in 1975. The National Library of Australia has had a full-scale oral history operation going since 1970.

In Latin America, leadership has come from Eugenia Meyer of the Instituto Nacional de Antropologia e Historia in Mexico City. Her program has published some of its memoirs in pamphlet form, has attracted government funding, and has steadily expanded its interests. Argentina's Instituto Di Tella in Buenos Aires carried on a broad-scale economic, social, and political study of that country in an oral history effort begun in 1971, sharing its transcripts with Columbia. In Brazil, interest was sufficient to mount a highly successful course in the subject in Rio de Janeiro in 1975 to prepare scholars from Brazil and Peru for a variety of planned projects.

A survey by Elizabeth B. Mason of Columbia University for the Oral History Association in 1974 turned up 165 projects outside the United States, on every continent. In addition to those mentioned, countries where oral history activity was found included Chile, Denmark, France, West Germany, Holland, India, Ireland, Israel, Jamaica, Kenya, Lebanon, the Philippines, Rhodesia, Singapore, South Africa, Sri Lanka, and Sweden. The 1976 *Oral History Review* included reports on oral history in Australia, Brazil, Mexico, and Great Britain, and OHA's Canadian meeting symbolized its awareness of international interest.

Long-Term Significance

Oral history, if it achieves the mission its votaries have set for it, will win universal acceptance as a form of primary source material, one that is quite as pervasive, and no more and no less valid, per se, than the holographic documents it purports to replace. Its most ardent champions would not contend that this is in the immediate offing, heartening as its progress has been.

The movement has weaknesses that have prevented it from having the impact upon the scholarly world that one might expect. The experience of Eugenia Meyer in Mexico has been all too common everywhere—difficulty in "convincing historians of the value of this new source material, which was initially received quite indifferently or as 'a waste of time' because of its inherent subjective and partisan qualities." Even after academic skeptics are converted, as she has pointed out, "few are willing to involve themselves in the task of producing this type of source," save when they have books of their own in mind (*14*).

In consequence, oral history has failed to receive the critical attention it needs if it is to fulfill its potentialities. Its reception is the more striking if one contrasts it with the tumultuous one that greeted another ill-named child of the technology that burst into the house of learning on its heels—the child named quantitative history, or cliometrics. For a time, at least, its computer applications and their ramifications became a veritable obsession within the historical profession. Oral historians could argue that *All God's Dangers* was patently a more durable contribution to the history of the American South than *Time on the Cross,* the controversial attempt to apply cliometrics to the economics of slavery. They could insist that *Working,* or *By Myself, I'm a Book!,* an oral history of the immigrant Jewish experience in Pittsburgh, held values for urbanologists comparable to any that the quantifiers, or cliometricians, had given them. No matter. The critical attention accorded quantifiers, criticism that should serve to discipline their work, eluded oral history.

Should a transcript show changes made by the oral author when he reviewed it, for example, or should the final product be a smoothly edited, chaptered, completely retyped MS? Scholars worth their salt know the former is preferable. Yet they have been mute, with the result that some centers follow one procedure while others, more anxious to win the approval of their oral authors, follow another.

What of Barbara Tuchman's charge that oral history gathers trash and trivia with all the discrimination of a vacuum cleaner (*15*)? Defenders respond that what is trash to one researcher turns gold to another, and that rapid development of finding aids will obviate her point by unearthing the nuggets. Yet they must own that standards of quality have been slow in developing, again for want of informed criticism by scholars for whom the work is intended.

What impact has the movement had upon historical literature? Manifestly, there has been an infusion of the spoken word into this tradition-bound branch of letters through the use of oral history, much of it so recent there are no studies, as yet, of the consequences. A single collection, Columbia's, has seen the number of books drawing upon it surge from 120 in its first 22 years (up to 1970) to nearly triple that total in the 6 years that followed. Notable books utilizing other collections in the same period included David Halberstam's *The Best and the Brightest* (John F. Kennedy Library oral histories); *The Devil and John Foster Dulles*, by Townsend Hoopes (Dulles oral history collection, Princeton); *Charles Ives Remembered*, by Vivian Perlis (Yale Music Library oral histories); Margaret Truman's biography of her father (Truman Library oral history collection); *Lyndon Johnson and the American Dream*, by Doris Kearns (LBJ Library oral history collection); and harbingers of more to come from these and other repositories, all of them still comparatively new.

In the same period there has been a parallel jump in the number of monographs, biographies, and studies of current affairs that rely wholly or in part upon their authors' own interviews. It is not journalists but academics who now account for the bulk of the interviewing that is carried out with books in view, the very academics who would have been loath to risk their reputations by so much as citing oral sources a decade or so back, assuming that interviews had occurred to them at all. It is a turnabout little noted. The impact of oral history extends beyond work drawing upon established collections, insofar as these have inspired individual scholars to sally forth and do it for themselves.

Are such books the better for it? The question defies a sweeping answer, but one would have to be churlish to deny that in innumerable cases they are. Some, like George Martin's life of Frances Perkins, *Madam Secretary*, would have been impossible without oral history, as the author has said. Others, like William H. Van Vorhis's *Violence in Ulster* are "oral documentaries," distilled entirely from pools of oral history. Historical literature, then, is clearly the richer for it—richer in pungent quotation, in color, in anecdote, in personality, in insight—and beyond that there are now scores of authors to testify, as Walter Lord has, that intensive interviewing has enabled them to get to "the guts of the event, the heart of it," a point Lord has documented with examples from his own work.

Oral history's greatest growth to date has taken place in apparent defiance of the "Great Depression" engulfing the world of higher education in America (1967–). It would be a mistake to assume, however, that the movement was unaffected. Large institutions that normally could have been expected to respond to its challenge by committing themselves to the work, thereby endowing it with a stronger institutional footing, have held aloof. Oral history will continue to develop regardless. It draws vigor from a lively sense of mission, a strong professional association, and a future that excites imaginations in half a dozen disciplines. But until a better day, when more major universities and great research libraries perceive the work as central to their purpose—creating and disseminating by modern means "wise wordes taught in numbers for to runne," as Edmund Spenser put it, "for ay"—fuller assessment of its impact must wait.

REFERENCES

1. Unpublished progress report, Oral History Research Office, Columbia University, 1950. The theme runs through oral history literature perhaps more strongly than any other.

2. *Oral History,* annual report: 1975, Columbia University, p. 4.
3. Jerre Mangione, *The Dream and the Deal: The Federal Writers' Project, 1935–1943,* Little, Brown, Boston and Toronto, 1972, pp. 257–258.
4. Joseph L. Mitchell, "Professor Sea Gull," *The New Yorker,* December 12, 1942, pp. 28–37; and "Joe Gould's Secret," *The New Yorker,* September 19, 1964, pp. 61–125, and September 26, 1964, pp. 53–159.
5. Elizabeth Dixon and James V. Mink, eds., *Oral History at Arrowhead: Proceedings of the First National Colloquium on Oral History,* 2nd ed., Oral History Association, New York, 1969, pp. 36–37.
6. In April 1948, just 1 month before the first oral history interview, the first two American-made tape recorders, modeled on a captured German Magnetophon, emerged from Ampex facilities in California. See "Creating the Craft of Tape Recording," by John T. Mullin, *High Fidelity Magazine,* April 1976, pp. 62–67. Thus tape recorders existed before oral history was launched, but the launchers were unaware of them. (They did not become generally available until several years later.)
7. Much of the information on early years has been taken from file copies of unpublished reports of the Oral History Research Office, Columbia University. Other sources are given in "Oral History: Problems and Prospects," by Louis M. Starr, in *Advances in Librarianship,* Vol. 2 (Melvin G. Voigt, ed.), Seminar Press, New York, 1971.
8. Voigt, Ref. 7, p. 296.
9. "Duke U. Students Learn Interviewing Techniques of 'Oral History' to Record Lives of Ordinary People," *New York Times,* May 6, 1974, p. 41.
10. Ref. 5, p. 25.
11. Adelaide Tusler, "Report on Survey of Oral History Programs," UCLA, Los Angeles, 1967, multilithed.
12. Louis M. Starr, ed., *The Second National Oral History Colloquium,* Oral History Association, New York, 1968, pp. 113–116.
13. *Oral History,* annual report: 1970, Columbia University, p. 6.
14. *Oral History Review,* 1976 (in press).
15. Barbara Tuchman, "Research in Contemporary Events for the Writing of History," in *Proceedings of the American Academy of Arts and Letters and the National Institute of Arts and Letters,* Second Series, No. 22, New York, 1972, p. 62.

BIBLIOGRAPHY

Albertson, Dean, "History in the Deep-freeze: The Story of Columbia's Oral History Project," *Columbia Lib. Columns,* **2,** 2–11 (1953).

Allen, Richard B., "New Orleans Jazz Archive at Tulane," *Wilson Lib. Bull.,* **40,** 619–623 (March 1966).

Bartlett, Richard A., "Some Thoughts After the Third National Colloquium on Oral History," *J. Lib. History,* **4,** 169–172 (April 1969).

Baum, Willa K., "Oral History: a Revived Tradition of the Bancroft Library," *Pacific Northwest Quart.,* **58,** 57–64 (1967).

Baum, Willa K., *Oral History for the Local Historical Society,* 2nd ed., rev., American Association for State and Local History, Nashville, Tenn., 1974.

Baum, Willa K., "Oral History, the Library and the Genealogical Researcher," *J. Lib. History,* **5,** 359–371 (October 1970).

Benison, Saul, "Reflections on Oral History," *Amer. Archivist,* **28,** 71–77 (January 1965).

Bombard, Owen W., "A New Measure of Things Past," *Amer. Archivist,* **18,** 123–132 (April 1955).

Bombard, Owen W., "Speaking of Yesterday," Ford Motor Company Archives, Dearborn, Mich., 1952.

Bornet, Vaughn Davis, "Oral History *Can* Be Worthwhile," *Amer. Archivist,* **18–19,** 241–253 (July 1955).

Campbell, Joan, ed., *Oral History 74,* La Trobe University, Bundoora, Victoria, Australia, 1974.

Catton, Bruce, "Talk Now, Play Later," reprinted as "History-Making Idea," *Think,* **31,** 20–23 (1965).

Challener, Richard D., and J. M. Fenton, "Recent Past Comes Alive in Dulles 'Oral History,'" *University, Princeton Quart.,* **3–9,** 29–34 (1967).

Claremont Graduate School, "Oral History Program," Claremont, Calif., 1964.

Colman, Gould P., "Oral History—An Appeal for More Systematic Procedures," *Amer. Archivist,* **28,** 79–83 (1965).

Colman, Gould P., "Oral History at Cornell," *Wilson Lib. Bull.,* **40,** 624–628 (1966).

Columbia University, Oral History Research Office Annual Reports, Columbia University, New York, 1950–.

Columbia University, "Oral History in the United States," Oral History Research Office, Columbia University, New York, 1965.

Conference on Science Manuscripts, May 5–6, 1960, "Case Studies of Research Experience," *Isis,* **53,** 39–51 (1962).

Cornell University, Oral History Project "Reports," Cornell University, Ithaca, N.Y., 1962–1965.

Cornell University Libraries, "Bulletin of Cornell Program in Oral History," Cornell University, Ithaca, N.Y., 1966–1972.

Crowl, Philip A., "The Dulles Oral History Project: Mission Accomplished," *AHA Newsletter,* **5,** 6–10 (1967).

Curtiss, Richard D., et al., *A Guide for Oral History Programs,* California State University, Fullerton, Calif., 1973.

Dixon, Elizabeth I., "Arrowhead in Retrospect," *J. Lib. History,* **2,** 126–128 (April 1967).

Dixon, Elizabeth I., "The Implications of Oral History in Library History," *J. Lib. History,* **1,** 59–62, 74 (January 1966).

Dixon, Elizabeth I., "Oral History: A New Horizon," *Lib. J.,* **87,** 1363–1365 (April 1, 1962).

Dixon, Elizabeth I., "The Oral History Program at UCLA: A Bibliography," University of California Library, Los Angeles, Calif., 1966.

Finnegan, Ruth, "A Note on Oral Tradition and Historical Evidence," *History and Theory,* **9,** 195–201 (1970).

Fontana, Bernard, "American Indian Oral History," *History and Theory,* **8,** 366–370 (1969).

Forest History (Twenty-fifth anniversary issue, contains editorial "Why Oral History?" and excerpts from 11 oral history interviews), **16**(3), (October 1972), Forest History Society, Santa Cruz, Calif.

Frank, Benis M., "Oral History: Columbia and USMC," *Fortitudine,* **3**(2), 19–20 (Fall 1973).

Freese, Arthur S., "They All Made History," *NRTA J.,* **25**(119), 10–12 (May–June 1974).

Fry, Amelia R., "Persistent Issues in Oral History," *J. Lib. History,* **4,** 265–267 (July 1969).

Fry, Amelia R., "The Nine Commandments of Oral History," *J. Lib. History*, **3**, 63–73 (January 1968).

Fry, Amelia R., and Willa K. Baum, "A Janus Look at Oral History," *Amer. Archivist*, **32**, 319–326 (October 1969).

Gilb, Corinne, "Tape Recorded Interviewing: Some Thoughts from California," *Amer. Archivist*, **20**, 335–344 (October 1957).

Glass, Mary E., "The Oral History Project of the Center for Western North American Studies: A Bibliography," Desert Research Institute, University of Nevada, Reno, Nev., 1966.

Haley, Alex, "My Furthest-Back Person—The African," *New York Times Magazine*, July 16, 1972, pp. 12–16.

Harry S. Truman Library Institute, "Research Newsletter Number Ten," Independence Mo., 1967; also "Oral History: The Truman Library Approach," 4(2), (Spring 1976).

Hart, Katherine, "Memories Become History," *Texas Lib. J.*, **45**, 33–34 (Spring 1969).

Hebrew University of Jerusalem, "Oral History Division, Catalogue No. 3," Institute of Contemporary Jewry, Jerusalem, 1970.

Hewlett, R. G., "A Pilot Study in Contemporary Scientific History," *Isis*, **53**, 31–38 (1962).

Hoyle, Norman, "Oral History," *Lib. Trends*, **21**, 60–82 (July 1972).

Kielman, Chester V., "The Texas Oil Industry Project," *Wilson Lib. Bull.*, **40**, 616–618 (March 1966).

Krasean, Thomas K., "Oral History . . . Voices of the Past," *Lib. Occurrent*, **22**, 297, 305 (August 1968).

Lieber, Joel, "The Tape Recorder as Historian," *Saturday Review*, June 11, 1966, pp. 98–99.

Lord, C. L., ed., "Ideas in Conflict: A Colloquium on Certain Problems in Historical Society Work in the United States and Canada," American Association for State and Local History, Harrisburg, Pa., 1958.

McPherson, M. W., and J. A. Popplestone, "Problems and Procedures in Oral Histories," *Arch. History Amer. Psychology*, **23**, 11 (1967).

Mason, Elizabeth B., and Louis M. Starr, eds., *The Oral History Collection of Columbia University*, 3rd ed., New York Times Company, New York, 1973.

Mason, John T., Jr., "An Interview with John T. Mason, Jr., " *U.S. Naval Inst. Proc.*, **99**(7/845), 42–47 (July 1973).

Maunder, Elwood R., "Tape Recorded Interviews Provide Grass Roots History," *Forest History*, **2**, 1, 15 (1959).

Meckler, Alan M., and Ruth McMullin, eds., *Oral History Collections*, Bowker, New York and London, 1975.

Meyer, Eugenia, and Alicia Olivera de Bonfil, "Oral History in Mexico," *J. Lib. History*, **7**, 360–365 (October 1972).

Miles, Wyndham D., "Usefulness of Oral History in Writing the Story of a Large Scientific Project," *Ithaca*, **26**, 351–353 (1962).

Morrissey, Charles T., "The Case for Oral History," *Vermont History*, **31**, 145–155 (1963).

Morrissey, Charles T., "Truman and the Presidency—Records and Oral Recollections," *Amer. Archivist*, **28**, 53–61 (January 1965).

Moss, William W., *Oral History Program Manual*, Praeger, New York, 1974.

Nevins, Allan, *The Gateway to History*, Heath, Boston, Mass., 1938.

Nevins, Allan, "Oral History: How and Why It Was Born," *Wilson Lib. Bull.*, **40**, 600–601 (1966).

"Oral History: An Occasional News Sheet," Nos. 1–4, 1969–1974, University of Essex, Colchester, Essex, U.K.

Oral History: The Journal of the Oral History Society (Successor to "Oral History: An Occasional News Sheet"), 1973–, University of Essex, Colchester, Essex, U.K.

Oral History Association, "Newsletter," Oral History Association, New York, Los Angeles, Waco, Tex., 1967–.

Oral History Review, Oral History Association, New York, 1973–.

"Oral History Collection," *North Texas State Univ. Bull.*, 72–50 (n.d.), North Texas State University, Denton, Texas.

Perlis, Vivian, "Ives and Oral History," *Notes, J. Music Lib. Assoc.*, **28**, 629–642 (June 1972).

Pogue, Forrest C., "The George C. Marshall Oral History Project," *Wilson Lib. Bull.*, **40**, 607–615 (March 1966).

Pogue, Forrest C., "History While It's Hot," *Kentucky Lib. Assoc. Bull.*, **24**, 31–35 (April 1960).

Princeton University Library, "The John Foster Dulles Oral History Project: A Preliminary Catalogue," Princeton University, Princeton, N.J., 1966.

Regional Oral History Office, "Interviews Completed or In Process," University of California, Berkeley, Calif., 1965.

Reynoldston Research and Studies, "Oral History Developments in British Columbia," Vancouver, B.C., Canada, 1973.

Rollins, A. B., Jr., "The Oral History Project of the John Fitzgerald Kennedy Library," Harvard University *Report*, Cambridge, Mass., 1965.

Rumics, Elizabeth, "Oral History: Defining the Term," *Wilson Lib. Bull.*, **40**, 602–605 (March 1966).

Schlesinger, Arthur M., Jr., "On the Writing of Contemporary History," *Atlantic Monthly*, March 1967, pp. 69–74.

Schruben, Francis W., "An Even Stranger Death of President Harding," *Southern California Quart.*, **48**, 57–84 (March 1966).

Shaughnessy, Donald F., "Labor in the Oral History Collection of Columbia University," *Labor History*, **1–2**, 177–195 (Spring 1960).

Shockley, Ann Allen, *Manual for the Black Oral History Program*, Fisk University Library, Nashville, Tenn., 1971.

Shumway, Gary L., *Oral History in the United States: A Directory*, Oral History Association, New York, 1971.

Shumway, Gary L., and William G. Hartley, *An Oral History Primer*, California State University, Fullerton, Calif., 1973.

Skeels, J. W., "Oral History Project on the Development of Unionism in the Automobile Industry," *Labor History*, **5**, 209–212 (1964).

Starr, Louis M., "Columbia's Reservoir of Source Material," *Graduate Faculties Newsletter*, November 1959, pp. 1–3.

Starr, Louis M., "Oral History: Problems and Prospects," in *Advances in Librarianship*, Vol. 2 (Melvin Voigt, ed.), Seminar Press, New York, 1971, pp. 275–304.

Starr, Louis M., "Studs Terkel and Oral History," *Chicago History*, 3(2), 123–126 (Fall 1974).

Stephens, A. Roy, "Oral History and Archives," *Texas Lib.*, **29**, 203–214 (Fall 1967).

Swain, Donald C., "Problems for Practitioners of Oral History," *Amer. Archivist*, **28**, 63–69 (January 1965).

Teiser, Ruth, "Transcriber's Fancies," *J. Lib. History*, 5, 182–183 (April 1970).

Van Dyne, Larry, "Oral History: Sharecroppers and Presidents, Jazz and Texas Oil," *Chron. Higher Education*, **8**, 9–10 (December 24, 1973).

Waserman, Manfred, *Bibliography on Oral History*, Oral History Association, New York, revised 1975.

White, Helen M., "Thoughts on Oral History," *Amer. Archivist*, **20**, 19–30 (January 1957).

Wilkie, James W., *Elitelore*, Latin American Center, University of California, Los Angeles, 1973.

Wilkie, James W., "Postulates for the Oral History Center for Latin America," *J. Lib. History*, **2**, 45–54 (January 1967).

Wyatt, William, "Researching the South Dakota Frontier," *South Dakota Lib. Bull.*, **52**, 151–156 (October–December 1966).

Zachert, Martha Jane, "Implications of Oral History for Librarians," *College Research Lib.*, **20**, 101–103 (March 1968).

Zachert, Martha Jane, "Oral History Interviews," *J. Lib. History*, **5**, 80–87 (January 1970).

Zachert, Martha Jane, "The Second Oral History Colloquium," *J. Lib. History*, **3**, 173–178 (April 1968).

LOUIS M. STARR

OREGON HISTORICAL SOCIETY

The Oregon Historical Society was organized on December 17, 1898, by a group of prominent Oregonians at a meeting in the Portland Library. Among the first members were Sidney Walter Moss, one of the founders of Oregon City, the first capital; and Harvey W. Scott, elected first president of the society. In a sense it was destined ultimately to take the place of the old Oregon Pioneer Association (1873–1951), the membership of which was limited to those immigrants of both sexes who had come to the original Oregon Country. The annual *Transactions* of the Pioneer Association contained much source material for the history of the state and the region.

The purpose of the Oregon Historical Society was to preserve, collect, and edit for publication all types of primary documents relating to the history both of Oregon proper and of the Pacific Northwest in general. Permanent library and museum quarters were provided in the Portland Municipal Auditorium in 1919, but it was not until a half century later that adequate housing was provided in the Historical Center in Portland.

From the beginning, the society has had a vigorous and productive publication program. The first issue of the valuable *Oregon Historical Quarterly* appeared in March 1900, and it has become a basic point of reference for historical studies of the whole area. The annual *Proceedings* were published separately for the first 5 years. A number of monographs and specialized works have also carried the society's imprint, covering such subjects as the medical history of the state, the lumber industry, the constitutional convention of 1857, and local history. In connection with the latter, it is noteworthy that the Oregon Historical Society has actively supported county societies and other local historical activities.

Support of the society has come both from the state and from private individuals, firms, and organizations. The latter group has been a more productive source of income than it is in most state-supported historical societies; and the active membership has been substantial from the beginning (370 charter members, of whom 76 were life members). The relatively small staff includes trained professional personnel. The funds for book and serial acquisition, barely into five figures, hold the acquisition program to regional scope. However, there have always been significant private donations.

The library collection includes some 50,000 books and bound periodicals. Most of the significant Oregon newspapers, weekly and daily, are currently received. The manuscript collection of well over 100,000 items dates from the last decade of the 18th century to the present. There are over 4,200 maps, and there is a particularly valuable collection of some 250,000 photographs and negatives showing all aspects of life in Oregon from 1855 to the present. The scope is largely confined to Oregon and the Pacific Northwest, with supporting general reference materials. Within this framework is included Washington State, British Columbia, and Alaska, as well as the old Oregon Country and the modern state. Labor, Pacific maritime history, the westward movement, and urban affairs are also well represented.

BIBLIOGRAPHY

Corning, Howard McKinley, *Dictionary of Oregon History, Compiled from the Research Files of the Former Oregon Writers' Project with Much Added Material*, Binfords & Mort, Portland, Oregon, 1956.

Oregon Historical Quarterly. Reports of annual meetings and president's and treasurer's reports in the fourth issue of each volume.

Whitehill, Walter Muir, *Independent Historical Societies; an Enquiry into Their Research and Publication Functions and Their Financial Future*, Boston Athenaeum (distributed by Harvard Univ. Press), Boston, 1962.

LAWRENCE S. THOMPSON

OREGON LIBRARY ASSOCIATION

During a meeting of the Pacific Northwest Library Association (PNLA) at Timberline Lodge on Mt. Hood in Oregon, the Oregon Library Association (OLA) came into existence. More specifically, on June 14, 1940, a group of Oregon librarians agreed that there was a need for improvement in librarianship in Oregon and they voted to establish OLA. Miss Wilma Boisselier of Hood River presided at the organizational session and Willis Warren, University of Oregon Library, was elected temporary president.

The original officers, besides Mr. Warren, were Miss Mary Blossom, Library Association of Portland, secretary; and Mrs. Dessa Hofstetter, Malheur County Library, treasurer. Dues were set at 50¢ to cover legislative action and postage. The *Constitution* was adopted August 29, 1941, at the Empress Hotel in Victoria, British Columbia, when Oregon librarians gathered during the annual PNLA Conference. The *Constitution* stated that the object of the Oregon Library Association was to promote better library service and librarianship. It was the thinking of the leaders of the new association that a pressing need existed for the improvement of librarianship, particularly in the public and school libraries of the state, and that OLA could assist in the enactment of a state certification law. In the years since its inception, the OLA legislative thrust has been in the areas of state aid and certification.

Membership in the association is open to any person, library association, or institution interested in library work. The first honorary life memberships were presented at the 1953 annual conference, and the *Constitution* was amended in 1954 to provide that such memberships could be awarded on a regular basis. Nominations for the membership are presented to the Executive Board from among persons who "have given valuable service to the Association, or who have made an outstanding contribution to librarianship in the state of Oregon."

The membership composition has fluctuated over the years, with the majority of active members coming from public and academic libraries. Sections for each library interest have not developed extensively because of the geographical diversity of the state—the majority of the population residing in a relatively small area—and the general slow development of libraries. Recognized sections have been organized for the public librarians, the children's librarians, and the trustees. Each of these is represented on the Executive Board of OLA. The school librarians in the state have a professional organization known as the Oregon Educational Media Association (OEMA). The vice-president of OEMA sits on the OLA Executive Board and vice-versa, but there is no longer a separate section of school librarians within OLA. The academic librarians, of both community colleges and 4-year institutions, meet together once during the annual conference but have no formal organization.

From the adoption of the original constitution, the Executive Board has consisted of a president, vice-president/president-elect, secretary, treasurer, immediate past president, member-at-large, and representatives to the American Library

Association Council and the Pacific Northwest Library Association Board. A trustee representative was added in 1942, and the state librarian as an ex officio member in 1947. Section representatives have been added as the membership voted to recommend their organization to the Executive Board. Committee chairmen participate in board meetings as requested, but are not considered part of the board.

The standing committees of OLA have varied over the years, but Legislation, Library Development, Certification (Library Standards), Membership, and Program have continued almost from the beginning. The program committee is no longer so organized, nor is there a publicity committee. Since the early 1950s there have been regularly functioning committees for Scholarship, Intellectual Freedom, and Oregon Authors. Special committees for the purpose of short-term action or projects have been appointed from time to time. The first Oregon Authors committee and the Long-Range Planning subcommittee of the Library Development Committee are pertinent examples.

Over the years, one of the most service-oriented committees of OLA has been that of the Oregon Authors. It was first appointed in 1950 with the name of Current Biographical Data on Oregon Authors Committee, and was established to work with a similar committee in PNLA. Each year the committee updates its informational list of Oregon authors and the report is presented to the annual conference.

At first, the OLA representative to the American Library Association (ALA) and to PNLA was the OLA president. Subsequently, elections for the position have been held every 2 years. The PNLA representative is elected by the OLA membership at large, while the ALA Councilor is selected by the ALA members within OLA. The OLA regularly supports the work of the ALA Washington office and holds membership in PNLA and ALA. Liaison is maintained with the Oregon chapters of the Special Libraries Association and the Association of College and Research Libraries.

Until recently, the most active committees have been those of Legislation and Library Development. The Intellectual Freedom Committee has become reactivated since 1970. The association opposed a ballot measure in 1974 which made librarians criminally chargeable for the dissemination or distribution of "obscene" materials, but without a substantial definition of "obscene." Although the measure passed, the OLA was instrumental in obtaining a defense for librarians through an amendment passed by the 1975 state legislature. Assistance is available to librarians for the writing of "Right to Read" policies for their libraries and investigation of censorship charges. Cooperation with the Intellectual Freedom Foundation and the increased need for vigilence in Oregon have changed the attitudes from the early 1950s when no OLA committee was named because "there was no specific need."

While the need for certification for Oregon librarians was the expressed reason for formulating OLA, the overriding need for improved library development through a program of state aid has been the dominant legislative strain since 1941. The association has written and endorsed more than a dozen pieces of legislation, all designed to aid the cause of public library improvement. The reasons for non-passage have varied very little in the 35 years: (*a*) the state legislature does not give high priority to the informational needs of Oregon citizens as provided through libraries and, therefore, (*b*) the legislature will not appropriate funds to provide for library development.

During the first decade of its existence, the OLA lobbied on a regular basis with the members of the Oregon legislature and attempted a statewide program of information about library problems. With the advent of Library Services and Development Act money, the impetus went into providing services and extension through federal funds, and there was relatively little legislative activity at the state level until the late 1960s. Since then, the OLA has again activated the state-aid cause and sponsored bills in the 1973, 1975, and 1977 Oregon legislatures. Each has been accompanied by information designed to show the need and the importance of state library development. It is hoped that the apparent requirement in the new federal legislation for libraries now being developed—that states must show cooperation with local governments in providing library services—will result in the badly needed state aid. This will continue to be a legislative priority for OLA.

Certification has waxed and waned over the OLA history, both caused by and diluted by the many nonlibrary-educated librarians in Oregon public libraries. As more professionally educated librarians have come into the state, the interest in certification has revived, and the OLA membership agreed to certification principles in 1974 and 1975. It has been agreed that legislative priority goes to state aid. When that has been accomplished, the move for state certification will move ahead.

There was no Continuing Education Committee in OLA until 1975. However, efforts to keep the membership updated about changes in libraries and the library profession have been centered in workshops held in conjunction with the annual conferences as well as those specially called during the interim. Interlibrary loan codes, intellectual freedom and legislative know-how sessions, government documents handling, children's literature, networking, and long-range planning are but a few of such workshop topics. It is hoped that some type of more formal continuing education program can be worked out between the University of Oregon School of Librarianship and OLA.

Communications among the members are handled, in the long-term, by the annual meeting, with its reports and business sessions and various workshops, and the regularly published *Oregon Library News*. The first communication to OLA members was the *News Letter* of August 5, 1942, which was issued by the president. The regular *News* was officially launched on April 27, 1951, and has been in publication since that time. It is published at least once quarterly, and usually up to six times per year. Information about Executive Board activities, committee activities, conference action, news of libraries, and an annual membership list are included. Publication history shows that *Special Bulletin*, No. 1, of OLA was issued April 27, 1951. It went out as the *Newsletter*, with five issues, through the summer of 1952. The *Oregon Library News* started with Vol. 1, No. 1, in December 1952.

It currently is distributed to all OLA members, exhibitors at the annual conference, and to nonmember institutions for a subscription fee.

Many dedicated people in the library profession have served OLA through its 35 years. Among those with longevity are Mary Phillips, director emeritus of the Library Association of Portland (also known as Multnomah County Library); Dr. Carl Hintz, university librarian emeritus, University of Oregon; William Carlson, university librarian emeritus, Oregon State University; Elizabeth Findly, professor emeritus, University of Oregon School of Librarianship; and Eloise Ebert, Oregon state librarian since 1959.

OLA holds an annual conference for the purpose of receiving committee reports, section and interest meetings, professional workshops, conducting business, and installing new officers. Balloting for OLA officers is by mail. Early OLA conferences were in conjunction with PNLA. Since 1951 OLA has met independently and annually. The meetings are usually held in April, with an attendance of 250 to 400 people.

BIBLIOGRAPHY

History of the Oregon Library Association, Oregon Library Association, Manual Committee, Eugene, Oregon, 1955 (available on loan from the Oregon Collection, University of Oregon Library, Eugene, OR 97403).

Minutes and Activities Notebook, 1965–1966 (available from Miss Elizabeth Findly, University of Oregon School of Librarianship, Eugene, OR 97403).

OLA Committee Reports (from various Annual Meeting packets, Archives of Oregon State Library, Salem, OR 97310).

Oregon Library News (current editor: Elaine Kemp, Catalog Dept., University of Oregon, Eugene, OR 97403).

KATHERINE G. EATON

OREGON STATE UNIVERSITY LIBRARY

Introduction

The library of Oregon State University—in common with many, perhaps most, of the land-grant university libraries—has evolved from simple, imprecise, and unclear beginnings to become a substantial resource in the fabric of regional and national academic library facilities. Its growth and development is at least somewhat typical of the evolution of academic libraries in America, and particularly of the separate land-grant libraries, which have almost universally grown from humble origins.

To set the Oregon scene, Oregon State University began in 1856 as a Community Academy in the then pioneer village of Corvallis. In 1858 the little academy became Corvallis College. In 1860 it was taken over by the Methodist Episcopal Church which operated it until 1868 when, under the provisions of the Morrill Act, it was designated as the Oregon Agricultural College. It functioned under this name until 1932 when the Oregon State System of Higher Education was organized. At that time it became, by consensus, Oregon State College (OSC). The name, however, was not made official until 1953. It was not until 1961 that the college legally became Oregon State University (OSU), although it had in fact been a university since the post-World War I years. The library required by this evolving separate land-grant institution grew and developed very slowly during the pioneer period.

The Early Days

From the beginning there was an institutional awareness in the little academy, which was to turn college, agricultural college, and then university, of the need for a library. The "Third Annual Catalog of Corvallis College," for 1867–68 (the earliest one to have survived), welcomed "donations to the Library and Cabinet of Curiosities . . . from friends throughout the State." This hopeful invitation did not result in any conspicuous early-day generosity but it is important that it was extended to the citizenry of what was then a raw pioneer state. Now, somewhat over a hundred years later, the desired library has grown, chiefly through institutional funding, to a collection of over 700,000 volumes handsomely housed. It was, however, a long time aborning.

The early college library, to the extent that it existed at all, was impoverished in the extreme. This was probably due more to financial realities and exigencies of time and circumstance than to lack of official institutional concern. Even though the hoped for gifts have not played a large part in the long-range development of the library, it was through a gift that the library began or at least assumed added significance.

In 1880 the Corvallis Library Association, which had been founded in 1872 and which had stated in its articles of incorporation that it was to "endure fifty years," went out of existence. In so doing it turned its collection over to a college student organization, the Adelphian Literary Society. In a sense this is the "official" beginning of the Oregon State University Library because the society placed the collection in the college for the use of faculty and students. It was, from the viewpoint of these present days, not much of a collection, containing only 605 volumes. It had, however, been carefully selected. In this it was to set the pattern for the next 100 years.

The entire association collection, the nucleus of what was to become the Oregon State University Library, required a room only 5 feet square in the College Building, standing then in what is now downtown Corvallis. There was no financial support of the transferred library by the college. In spite of this it grew. This it could do because the Adelphian Society assessed its members monthly dues of 50¢, a goodly sum for those days. This money was devoted to the purchase of books. That the transferred books were considered to be at least a quasi-college collection is indicated by the fact that the Adelphian "librarian" submitted an annual report and inventory of the books on hand to the college president. Less than one-half of the transferred association library books have survived to the present day. These are now carefully preserved in the library's vault.

The "College Catalog" of 1885–86 for the first time since 1872 contained reference to a library. Its statement that "the Adelphian Library contains some thousand volumes of choice and assorted literature" was an apparent acknowledgment that the library which served the college belonged to the student society. It was an indication too that the library had grown modestly but significantly since the Corvallis Library Association transfer of 1880. No further reference to a library, Adelphian or other, was to appear in the "College Catalogs" until 1898–99.

Sometime in either 1887 or 1888 the library was moved from its little 5-foot-square room to the then new campus. Its new home was Room 36 on the third floor of the new Administration Building, the now mellowed and venerable structure known as Benton Hall. This move, through a misunderstanding according to student John Fulton, was carried out very wastefully. Fulton, who was later to devote his entire life in service of the college as a professor of chemistry, has been quoted as saying that for many months boxes of books lay in the hallway, accessible to anyone who cared to take them. He believed that some were simply picked up and consigned to the furnace room on the first floor of Benton Hall. He also reported that at one time a whole wagon load of books of all descriptions was hauled off to make room for new books.

Whatever the reasons, misunderstandings, indifference, ignorance, or the failure to assign responsibility, the struggling little library was destined to now go through about a decade of neglect and haphazard care. The pattern of this obviously low period in the history of the library was to entrust management of it to a student librarian, who apparently was assigned this responsibility with little or no indoctrination.

THE TIME OF THE STUDENT LIBRARIAN

In 1890 the Adelphians officially transferred the library to the ownership of the college. For the next 8 years it was, however, to continue to be entirely student operated. Even though now the property of and under the care of the college, the pattern of haphazard management persisted. A student librarian was simply handed the keys and told he was in charge. Sometimes there was not even contact with or instruction from the previous librarian. The selected student librarians, usually young people who needed work to finance themselves, were universally well meaning and conscientious. Some of them were outstanding, but without indoctrination or leadership it was obvious that the library would suffer.

One of the early student librarians, Willard Wallace Smith ('95), who was to be the librarian for three academic years, was an able and exceptional individual. Upon invitation of Miss Lucy Lewis, college librarian 1920–1945, who in 1927 undertook to gather historical information on the early library, Smith submitted a lively and uninhibited account of his life and times as the "first" librarian. He was at the time of his report a practicing physician in Phoenix, Arizona.

Dr. Smith's account shows that he attacked his responsibilities with more vigor and imagination than might have been expected from a student. What he did justifies his claim to be the first "librarian." He reported to Miss Lewis that he established his own classification system, that he built the necessary card catalog trays in the college shop at 15¢ per hour, and that he also instituted a circulation system. One of his comments is particularly revealing:

> Along about Christmas somebody asked me, I believe it was a member of the faculty, what I was doing, and I told him I was arranging the Library. His reply was "Thunder, I didn't know we had any Library." I took him up and showed him.

Young Smith was succeeded in the library by Miss Esther Simmons of Fresno, California, also OSAC '95. Miss Simmons, who had a long and successful career as a school teacher, came back to Corvallis to retire. She continued to live there in full health and vigor until her death on September 18, 1973. She had, when she passed away, attained an age of 101 years.

The last of the student librarians was Lionel Johnson ('98), who was later to be a feature writer for the Los Angeles *Examiner*. He too was an understanding person. Indicative of the times was this comment by him:

> It seems that in rainy weather the Library was the only convenient place for lovers to meet, though they were not allowed to talk above a whisper. It was very common to find cooing couples hidden away behind racks of books, and my policy was not to interfere with them unnecessarily.

That Student-Librarian Johnson found work in the library to be good background for future employment, as so many student library workers have, is shown by this statement in his report to Miss Lewis:

> When the new Librarian of the Los Angeles Public Library, Everett V. Perry, arrived here some years ago I was assigned to write for my newspaper various articles explanatory of his methods of work. In this way I learned to appreciate the training and ability a good Librarian must have in order to be successful.

The termination of Lionel Johnson's "librarianship" marked the end of some three decades of library management solely by students. While these young people, apparently with minimum direction, did well—and some of them did outstandingly well—these beginning decades were not, as far as the library was concerned, a time in which the college can take pride. From the vantage point of these present days it must, of course, be recognized that instruction before the 1900s was almost entirely textbook rather than library oriented. It must also be recognized, as some of the college catalogs of the period did, that the college was then "really an industrial school."

One thing was surprisingly and sadly missing in the early history of the library;

there was a notable lack of a vital administrative and faculty concern about the library similar to library interest and action found in many other pioneer and emerging colleges and universities of those years. This does not mean a total lack of faculty concern. There was concern, obviously, but it is evident that the Library Committee under which the student librarians worked was casual in the extreme in its discharge of its responsibilities.

The evolving situation did, however, presage a change for the better in institutional concern about the library. In 1896 young Professor John Horner, who was to become a distinguished member of the faculty, was the chairman of the Library Committee. He visited the libraries of the University of California and Stanford University and came home impressed by and enthusiastic about these libraries. It would take time but this widening of horizons and the accompanying comparisons would eventually be reflected in an upgrading of the Oregon College Library.

In 1893 the college published a 39-page "Catalog of the College and Station Libraries." This catalog shows the library well on its way to being highly departmentalized with 1,001 volumes in the College Library and 900 volumes in the Station Libraries. Affairs at this point could easily have taken a turn which would have created a separate agricultural library (as in some of the other early separate land-grant colleges) plus a college library. Fortunately, such a fragmentation of library resources was somehow avoided.

A DECADE OF FULL-TIME, NONPROFESSIONAL LIBRARIANS

In the late 1890s the college was growing steadily. Times were changing and the need of creating and nurturing a better library was becoming more and more inescapable for both faculty and administration. The library consequently entered a second phase of its history. This was its period of management by full-time, nonprofessional librarians.

The first of the nonprofessionals was handsome young Arthur Stimpson, OSAC '98, fresh from the Spanish-American War. He had been a popular student, playing on the football team and serving as a member of the staff of the then new *Barometer*, the student newspaper. Mr. Stimpson responded in 1927 to Miss Lewis's gathering of historical information with a lively account of his time as librarian. He reported that he was at the Presidio in San Francisco being mustered out of the Second Oregon Volunteer Infantry after a year of service in the Philippines when an invitation came to him to serve as the college librarian at the munificent salary of $40.00 per month.

When Mr. Stimpson reported for duty he found that the library had been moved to new quarters in the basement of Benton Hall. Much needed doing, as the following revealing paragraph shows:

> Arriving in Corvallis about 10 days before the opening of the fall term in 1899, I found books scattered helter-skelter all over the newly established Library quarters. Books to the right, books to the left, magazines to the front, papers behind, bulletins everywhere, unclassified, unindexed, uncataloged, nothing that

> well ordered books should be. But by the time school opened the books were on the shelves, arranged so the Librarian could find them if no one else could. Later on I adopted the Dewey Decimal System of classification and improvised a method for keeping a record of books issued. In 1900, $1,000 was allowed for the purchase of books, and with this amount about 600 volumes were obtained.

Mr. Stimpson resigned in November of 1901 to accept a position in the Railway Service. He was succeeded by Oren W. Lewis, OSAC '95. Lewis was not, however, quite a full-time librarian, as he was also required to teach algebra and arithmetic. His response to Miss Lewis's request for historical information was in part as follows:

> A very important part of the duty of the Librarian was to maintain order and quiet so that those so inclined could actually study; this was really the hard part of the work. . . . After a short time it became my duty to apply disciplinary measures, usually suspension or expulsion from use of the Library.

Following Mr. Lewis's resignation in 1902 the library came under the management of the third and last of the full-time, nonprofessional librarians. This was R. J. Nichols, a native Oregonian. As a graduate of Willamette University he was the first non-OASC librarian. His was to be the longest tenure, 1902–1908, for a librarian up to that time. His staff, he said, consisted of the librarian and himself.

While the library was far from flourishing during the Nichols regime, the college was taking some steps, however belated and laggard, to improve things. The increasing college awareness of the importance of the library had become evident during both the Stimpson and Lewis administrations. The "College Catalog" of 1898–99 contained, as the precursor of catalog library statements which have continued ever since, the first statement about library facilities to appear since a brief sentence in the 1885–86 catalog. In a substantial library section, the catalog of 1899–1900 claimed 3,000 library volumes, plus 5,000 pamphlets and bulletins. They were said to be cataloged and classified by the Dewey Decimal System. The library was now open daily from 8 A.M. to 5 P.M. Books other than reference could be withdrawn for home use. In the 1904–05 "College Catalog," 4,000 volumes and 10,000 pamphlets were said to be in the library.

A definite factor in growing institutional concern about the library and its needs was that the students, in their new publication the *Barometer*, begun in 1895, had found a voice which was to continue to be influential in library affairs in all the succeeding years. In November of 1897 the *Barometer* noted, with obvious satisfaction, that the Board of Regents had set aside "about $600" for library purposes. It also observed:

> The Library is coming to be one of the most important factors of the institution. According to a decision by President Gatch the various Professors of the College will have some say in selection of books to be purchased hereafter.

In January of 1897 the *Barometer* extolled the educational value of reading. It also said, realistically: "Though our College Library is not by any means what it should be, neither is the use of it what it should be." Care in selection of books for reading was advised because there were "too many valuable books to be read to spend time on trash."

In October of 1899 the *Barometer,* noting the advent of the first full-time librarian, said, "Arthur J. Stimpson '98 (who as a student had been on the *Barometer* staff) is now serving behind the bars—of the College Library. Mr. Stimpson's genial countenance has not been changed by serving in the Philippines." That Mr. Stimpson was improving things was evident in a statement in the *Barometer* (then a monthly) of November 1899, expressing appreciation for "the new Library and reading room."

Notices and commentary about the library continued to appear in the *Barometer* in a pattern which has persisted ever since. In March of 1900 it was reported: "A new addition to our already large Library is daily expected. About 400 books will soon be here to gladden the hearts of those who love to read."

In the *Barometer* of January 26, 1907, it was reported that the President's Message, delivered in the Chapel, dealt principally with the abuse of magazines in the library:

> If students had a little more respect for such things, it would not be necessary to draw a code of rigid laws, thus shutting everyone out from privileges which, but for the destructive few, might still be maintained in the Library.

The students of 1907, grandparents and great grandparents of the present generations, were obviously much the same as their offspring.

The *Barometer* continued to be appreciative of the library. In its issue of March 2, 1907, it celebrated, editorially, the addition of a beautiful new reading-room table to the library. This was said to be "a great improvement when we think of the two old stands used heretofore."

R. J. Nichols was the full-time librarian during most of the years covered by these appreciative notes of small improvements. He gave the library more sustained direction than it had had up to that time. At the request of President Gatch he prepared a "Catalog of the Library," which the college published in 1905 in its bulletin series as a 32-page pamphlet. This was a title listing of books owned, simple in the extreme. As an historical document it is less satisfactory than the earlier catalog of 1893. By count it recorded 2,735 titles, equivalent to perhaps 3,000 volumes, as compared with 1,901 volumes in 1893.

Nichols became known to the students as "Two-Week" Nichols. This was so because punishment for talking or otherwise disturbing the library was banishment from it for 2 weeks. If students transcended the bounds of his approved decorum, Nichols would sing out to the offender, "Two weeks for you!" And 2 weeks it was, say some of the students of the period.

This discipline of the early-century adolescents was apparently required. The "Orange" Yearbook of 1909, in commenting on the value of making serious use of the library, had this to say:

> But there are those who are wont to twaddle behind the bookshelves, talk aloud, fight a duel with books, or jerk the chair out from under some awkward rook.

Their appreciation for literature is easily satisfied. *Puck, Life*, and the daily papers constitute their environment. For these, "Two Weeks."

Nichols resigned from the library in 1908 to take up farming at nearby Monroe. He subsequently served for several terms in the Oregon State Legislature. The library as he left it was far from flourishing, but it was definitely better than he found it. Even so the college was still, after five decades of existence, making do with a library which was, in the words of the *Barometer*, "by no means what it should be." Better times were, fortunately, immediately ahead.

The Coming and the Contributions of Ida Angeline Kidder

There came in the summer of 1908 to direct the library, as its first professional librarian, Ida Angeline Kidder (see Figure 1). This was the turning point, a major milepost. From then on things would be different, very different.

Mrs. Kidder was, at the time of her appointment, 53 years old and only 2 years out of the University of Illinois Library School. In the 12 years it would be per-

FIGURE 1. *Ida Angeline Kidder.*

mitted her to serve she was to upgrade and improve the library markedly in every aspect, placing it on firm and enduring foundations. Far transcending these notable achievements, she was to enter into the lives, interests, and affections of the Oregon State students to an extent unparalleled in American library history.

Mrs. Kidder's first professional position was with the Washington State Library in Olympia. After a few months there she became, for 2 years, a library organizer for the Oregon State Library in Salem. It was from this position that W. J. Kerr, the new president of Oregon State Agricultural College, who had an instinct for attracting strong people, brought her to organize and develop the College Library, then containing 4,284 somewhat neglected and poorly organized volumes housed in a single room of the Administration Building.

Immediately there was a new spirit and a new vigor in the little one-room library. Mrs. Kidder fully realized that she had much to learn about agricultural college libraries. What she lacked in knowledge, she made up for in ambition. It was her purpose to make the library "one of the best agricultural libraries of the country." So, off went a letter to Claribel Barnett, librarian of the U.S. Department of Agriculture, asking for help. She opened her heart, she said, "very freely to hear . . . I told her that I knew very little but that I had a great ambition to learn . . . I threw myself on her mercy to teach me. . . ." On July 21, 1908, back came a six-page, single-spaced letter, which is a key document in the history of the Oregon State University Library. On August 25, 1908, there followed a two-page letter. These letters and ensuing correspondence, reflecting the complete dedication of each of these two outstanding librarians, were the beginning of a life-long friendship.

Immediately, too, there began a series of notes, letters, verbal requests, and recommendations in biennial reports to the president for more help, more books, more money, more space—in a refrain which goes on even unto this day. While the results of these requests were not startling in terms of today's multimillioned libraries, they were, for that time and that emerging college, remarkably successful in comparative terms. During her 12 years, Mrs. Kidder increased the library some eightfold in volume content. She brought the staff from the one single position she accepted, to nine. She achieved, as what she considered to be her crowning glory, a new and well-planned library building of some 57,000 square feet. Notable as these things were, all part and parcel of her philosophy and ambition, they were not the most significant aspect of her librarianship. Capable librarians elsewhere in comparable situations have achieved as much.

The uniquely outstanding things Ida Kidder brought to the little college, eventually to become a university, were of the spirit. While she was a doer in concrete, physical terms—and the results of her doing were and still are available for all to see and use and profit by—she considered it important *to be* as well as to do. It was through her outgoing living of this philosophy that she gained the love and respect of the students, and of the faculty, too, to an extent rarely if ever equaled in American librarianship. Hers, however, was no lofty, impractical idealism. It was grounded in the realities of time and circumstance, as her substantial measurable achievements in developing books, staff, and building clearly showed. It was, in one sense, from her spirit and her enthusiasm and her energy in giving both free play that these material things flowed.

With sure instinct Mrs. Kidder turned first, in developing the library, to organization. With the help of a professional cataloger brought in for summer assistance in her very first year, she undertook to start the books already on hand toward their first professional classification and cataloging. She also placed the acquisitional and business aspects of operating the library on sound foundations.

As early as her second year, Mrs. Kidder was offering a "Library Practice" course required of all freshmen, then some 200. It was only because she had felt that she needed to know the college and the library better that she had waited a year to introduce this instruction. Within another year she was also offering lectures on the library in winter short courses for farmers. These resulted, for a period of years, in voluntary contributions of about $100 annually to the library. In those days, for this impoverished library, this was important money.

Later Mrs. Kidder lectured on the library in courses for the advanced training of secretaries. She also found time somehow to make trips out into the state to talk to farm groups. Letters and commentary from her students, as well as from farmers, make it clear that her talks were truly inspiring. It was through them that she began to enter so completely into the affections of the students and the college community. Her lectures, said one colleague, were as apt to be concerned with life and literature as much as with the use of the library.

Mrs. Kidder was keenly interested in building up inspiring ideals among the students, says a letter about her by her friend, Cornelia Marvin Pierce, Oregon state librarian. She had a broad appreciation of literature, especially of poetry. She was continually concerned that the Oregon State students, many of whom came from farm homes with limited cultural advantages, should be exposed to these things. She shared with her students the inspiring literature she enjoyed herself. She felt, and frequently said to her superiors, that the college, in its emphasis on technical education, was neglecting cultural and humanitarian instruction.

Her faculty colleagues have recorded that in her short talks on practical ethics to students, she generated a wonderful influence for good. She regarded the opportunity to meet students as the greatest privilege granted a librarian whose aim is service. In exercising this privilege she had readings for groups of students in her rooms at Waldo Hall. She also studied with them individually, her favorite Emerson, the Bible, and Shakespeare and other authors. She felt that students of the Bible should read it, not read about it.

Great as was Mrs. Kidder's appreciation of literature and poetry, her appreciation of people was even greater. She managed always to single out the best and finest characteristics of students. She helped them bring these things out in themselves. She was particularly helpful to foreign students. One young Hindu student, asked later if he had known Mrs. Kidder, said: "She was wonderful. She opened the world to me. She showed me all the world akin."

The chief characteristics which brought Mrs. Kidder so quickly into the affections of the college were her appreciation of the fine things of life, her interest in people, and her energy and good will. In her later years, when failing health required her to use an electric cart (a great novelty in those days) in her trips around the campus, she scattered cheery greetings along the way. There was, someone said, a kind of "Schuman Heinkness" about her.

It just came naturally, apparently, for the students to begin to call her "Mother" Kidder, a designation with which she was greatly pleased. Perhaps this term began to come into general use after a verse entitled "To Kidder Mater" appeared in the "Orange" student yearbook of 1912. It begins:

> Mother and Mentor, counsellor and friend
> Into whose bosom broad we all have poured
> Our hopes, fears, joys and sorrows without end,
> Certain to strike a sympathetic chord
> We know you love us all alike (perhaps a *shade*
> more lenience toward the naughty chaps)

No instance of reference to Mrs. Kidder as "Mother" previous to the publication of this poem has been noted. From that time on the term was increasingly used. Soon she was being referred to in no other way. She was continuing good copy in the student yearbooks, the "Orange," later to become the "Beaver," and the student newspaper, the *Barometer*. The "Orange" of 1918 has a picture of her in her electric cart surrounded by young women. It is entitled "Mother and her Rookesses." In that year a coed edition of the *Barometer* was dedicated to her. In the "Beaver" of 1919, the Woman's Section is dedicated in this way:

> We dedicate our section to the most universally loved woman on the campus, "Mother" Kidder. An inspiring teacher and the best of friends.

Perhaps Mrs. Kidder's crowning student recognition within her lifetime came in 1918 when Homer Maris, writer of the then new Alma Mater song which has endured ever since, dedicated it "to 'Mother' Kidder in recognition of her enobling influence and the great love felt for her on the part of all who have met under the old 'Trysting Tree.' "

Not all was sentiment and idealism with Mrs. Kidder. While she was endearing herself so completely to the students, she was also developing and operating the library with a firm hand. Her relations with the faculty were friendly and congenial, but it was her rules that prevailed, and well they knew it. They were held to a strict accounting of their allocated funds, meager indeed. If they underspent, they were reminded. If they overspent, as one or two were chronically wont to do in the way of professors the world around, they were taken to task in no uncertain terms.

Mrs. Kidder was no provincialite in her all-out efforts to bring her library into the very forefront of agricultural college libraries. To further improve herself, she made a trip in 1911 to visit libraries in the Midwest. She went to the libraries of the Universities of Illinois, Minnesota, and Wisconsin. She also visited the Iowa

State, John Crerar, and Purdue libraries, all "in order to get into close touch with the work as it is carried out in other institutions." Her progressiveness was reflected in opening the library for evening service when the staff consisted of only herself and student help, in establishing Sunday open hours when this was practically unheard of, and in issuing to the faculty a monthly list of new books in the library when this was far from a common procedure.

PROMOTION OF A LIBRARY BUILDING

Along with operating the library in all its routine aspects and maintaining contacts with students. Mrs. Kidder constantly kept the college administration aware of the increasingly acute housing problems of the library and the need for a new building. In the autumn of 1909, evening library hours were instituted for the first time for the faculty. By December these hours were extended to students, with attendant publicity about relieving pressures and congestion.

In 1910 a reading room in another building was opened, again with well-directed publicity. In 1911 there was a series of complaints in the *Barometer* about the library closing for the "Library Practice" courses. All of these things were background for a statement in the "Biennial Report of the College President" in 1911 that there was "great need for a library building to cost about $125,000." In 1912 the rapid growth of the library was emphasized by its expansion to occupy the entire second floor of the Administration Building. In the autumn of that year the *Barometer* complained that a chair in the library reading room, deserted only momentarily, would be found "filled by a life-size student of the green cap crowd. Let us offer a bunch of prayers for a library building in which this nuisance may be remedied." At that time Mrs. Kidder assured the students that "every effort is being made to render conditions as tolerable as possible until we can have larger library quarters."

Pressures and needs such as these culminated in a request by the Board of Regents to the 1917 legislature for an appropriation of $158,000 for a library building. Everything must have been in readiness, because with late-spring approval of the requested funds, the construction contract was let, in June, to an unlucky firm which got caught squarely in the middle of the World War I shortages and inflation. To the credit of the firm the building was not shorted. It was ready for occupancy, lacking only steel stacks, by World War Armistice time in November of 1918.

This building did not have quite the attention and rejoicing it might have had, although it had plenty, because the national and college energies and interests were being directed so exclusively toward the war. The young men students were going off to the armed services; and the girls, including some library staff members, were going, or wanting to go, into Red Cross or other war work. So off went Mrs. Kidder, too—by then universally known as "Mother"—to Camp Lewis, near Tacoma, Washington, to serve as hospital librarian for the summer of 1918. This was to be one of the greatest experiences of her life.

ARMY SERVICE AND OCCUPANCY OF BUILDING

It was entirely in character that Mrs. Kidder should quickly become a friend of the young soldier-patients and that she should soon be known to them, too, as "Mother." Some of them arranged a wager among themselves that she was so well known that a letter addressed to her only, "Mother Kidder, Oregon," would reach her. On her departure they sent her a letter so addressed. When she reached Corvallis, it was there waiting for her.

Mrs. Kidder was so enthused about her work with the soldiers that in writing to her assistant librarian, Lucy Lewis—at midsummer, and mindful, too, of duties and obligations at home and the new building under construction—she said, "I wish there were a hundred of me and each one had the strength of a lion and the days were one hundred days long." Her remarkable effectiveness in helping the soldiers and in entering into their affections is epitomized by a letter she received from a soldier in France:

> Dear Mother [began this young soldier]: That is how I must address you because I could not honor the one who sent me that most interesting letter of March 24th by any other name . . . don't you dare to call yourself "old." That applies only to people who have ceased to be interesting, who have outlived their usefulness and are social liabilities, not to such dynamos of kindness, sympathy, and understanding as you. Mother, you will never get old for the companionship of your incorruptible boys and girls and the immortals who live on your bookshelves have endowed you with a personality that defies the march of time.

September of 1918 found Mrs. Kidder back in Corvallis. From there she welcomed, with alacrity, invitations to talk about her Camp Lewis experiences, some from as far afield as Everett, Washington. There were not, however, one hundred of her, and the days were not one hundred days long, so early November and the eagerly awaited time for the moving of the library to its new home found her flat on her back with a heart attack. Writing to a colleague when she was recovering, she said, "I had to endure the cruel discipline of letting someone else superintend the move."

She comforted herself in that the plans were well laid, that her staff was competent, and that the move had gone smoothly. This could be so in part because, in the wartime shortage of labor, the faculty had stepped into the breach on a volunteer basis. From deans on down they wheeled and carried the books over an improvised trestle from the second floor of Benton Hall to the second floor of the new building. Momentous and welcome events were shaping up on the war fronts as the last book truck made the trip to the new building on November 6, 1918.

Commenting to the *Barometer* on this faculty assistance with the moving, Mrs. Kidder said: "One of the beautiful things to cherish in our memory and tradition is the fact that our faculty helped to move our Library, and that the new home was built in this tremendous time in the world's history."

THE KIDDER REGIME DRAWS TO A CLOSE

After World War I, with her beloved library safely housed in an attractive and commodious new home about which she easily could and did go into rhapsodies, Mrs. Kidder became more and more of a legend in her own time. Even though now in failing health, she never lost her interest in or warm contacts with the students. Her electric cart, which helped her get about the campus and community as she became increasingly lame, only added to her fame as someone different. Her active and wide-ranging mind continued as sharp and stimulating as ever. Her concern about broadening the cultural backgrounds of technically educated students in no way diminished.

Letters from former students came to Mrs. Kidder frequently in her later years. They wrote to ask her to help select books for their children, to congratulate her on the new building, to let her know of their doings, and sometimes just to wish her well. Always these letters were in warm and intimate terms. One man working in the Bureau of Markets in the U.S. Department of Agriculture, asking for advice in selecting books for his 3-year-old daughter, said: "I know of no one who is as well qualified to give it as you."

In an interview with the *Barometer* in June 1919, Mrs. Kidder said that the foundation of good manners is kindness and a true sense of values. In complimenting the students on their good manners in the library, she said:

> Nobody has to teach or admonish them. They know I love the Library and love them so much that I would be very hurt if the quiet of the Library should be disturbed . . . kind consideration for me then is one of the things that restrains the impulse to talk in the Library.

It was fitting that one of the very last letters Mrs. Kidder received at Oregon State should come from Claribel Barnett of the U.S. Department of Agriculture Library, as had also that first basic and influential letter of July 21, 1908, to the ambitious and eager novice seeking help. In the ensuing years these two women had become fast friends. Advice was no longer needed by the exceptionally successful librarian Miss Barnett had helped so much. Her letter of January 29, 1920, told, instead—and with obvious pleasure—of what a young Oregon State graduate who had been using the USDA library had said about the librarian who had helped to set him in good paths:

> He spoke so beautifully of you. I am sure it would have done your heart good to hear him. Everyone who comes from Oregon speaks the same way. You have certainly endeared yourself to all who have been there.

With her health more and more precarious, Mrs. Kidder wrote President Kerr in mid-January of 1920 telling him of her continuing illness with heart trouble and asking him for a leave of absence without pay. She received a friendly and solicitous response sympathizing with her illness and granting her request, but telling her that her leave would, of course, be on full pay. Whatever additions this would require to the budget would be authorized. He would, the president said, come to see her in a day or two. He expressed hope that her recovery was merely a matter of time.

Time was, however, for Ida Angeline Kidder, running out. Within a week of this exchange of letters with the president, which she must have found both comforting and reassuring, she suffered a massive brain hemorrhage. She died on February 29, 1920, without ever regaining consciousness. In recording her passing, the Portland *Oregonian* spoke of her as the "grand old lady of the College Library known familiarly and lovingly to three generations of College Students."

The reaction of students, past and present, was as intensive as it was unusual. The *Barometer* of March 2, 1920, said this:

> The life and influence of Mrs. Kidder has been an inspiration to all who knew her. She held a greater place than probably any other person and this endearment gave her the name of "Mother" Kidder. Her greatest thought after building up the Library was inspiring ideals among students. One of the groups that knew her indeed as Mother was the Cosmopolitan Club composed of students from all over the world.

"Mother" Kidder's final hours among her students and on the campus, placing an exclamation point to the universal esteem and affection in which she was held, were unique in all American library history. At the request of the students, her body lay in state on March 2, 1920, the day of her funeral, in the library building of her planning. Classes were cancelled from 10 to 2 o'clock and honor guards were at the casket. The funeral services were held on the steps of the library. It is true that an influenza epidemic had placed a ban on all large public gatherings, but one must believe that the students would have wanted it that way anyhow. A student body resolution of appreciation was read at the services. Floral tributes were so numerous that they could not all be accommodated at or near the casket.

"Mother" Kidder left her library and the campus not in a hearse but on the shoulders of young friends among the students. She was followed by a faculty honor guard and the College Band playing Chopin's "Funeral March." Her body went by train to a crematorium in Portland. Even there her students, mostly alumni, were with her. There was music but no services. So ended one of the most colorful and unique librarianships in American library history. Through her doings and her *being*, Ida Angeline Kidder had added an enduring luster not only to her library but to the entire profession of librarianship.

Lucy Lewis Takes Over

It was natural and appropriate that Mrs. Kidder's successor should be Lucy Lewis, who had been a member of the staff since 1911, first as head cataloger and later as reference librarian. In the next 25 years Miss Lewis was to prove and establish herself, as the following account of her regime will show, as one of the most effective and far-seeing academic library administrators in the country.

Born in Traer, Iowa, on February 5, 1879, Miss Lewis received her early education in the public schools of Pomona, California, and later at Pomona College, where she majored in Liberal Arts. This was followed by 2 years at the University of Illinois, from which she received a degree of Bachelor of Library Science in 1906. It was at Illinois that she and Mrs. Kidder first met as fellow students: Mrs. Kidder, the middle-aged woman seeking out a new way of life for herself after the death of her husband, and Miss Lewis, a young woman half her age preparing herself for what was to be an exceptionally fruitful and constructive library career. The disparity in age was no barrier between these two able women. The library school friendship endured and flowered, in the course of events, into a close and harmonious collaboration for some 9 years as librarian and assistant librarian at Oregon State Agricultural College.

Miss Lewis went directly from the Illinois Library School to become librarian of the New Mexico Territory College of Agriculture and Mechanic Arts. From there she let it be known to Mrs. Kidder, early in 1911, that if there were suitable openings on her staff or in the Northwest that she would be interested even though she had become attached to her New Mexico library. Mrs. Kidder welcomed the news of her availability with enthusiasm. When she was successful in securing authorization of a new position of cataloger, Mrs. Kidder immediately recommended Miss Lewis to President Kerr as her "sole candidate." The ensuing correspondence and negotiations brought Miss Lewis to the library in August of 1911 at a salary of $1,200 per year, almost as much as Mrs. Kidder was being paid. Arranging a salary at this level took a bit of doing by Mrs. Kidder. Much good was to come from President Kerr's reluctant approval.

Miss Lewis adjusted to her new position and responsibilities with more ease than might have been expected from one who had been a superior in her own right. All indications are that the professional as well as personal relations between these two remarkable women were continuously close and harmonious. Reports and correspondence of their years together reveal that, as the years went by, Mrs. Kidder leaned more and more on Miss Lewis, whom she sometimes referred to as "my right-hand woman."

Upon Mrs. Kidder's death, Miss Lewis was made acting librarian. On July 1, 1920, she became librarian at a salary of $2,800. The library over which she assumed command contained 41,428 cataloged volumes, many of which she had personally processed, plus some 7,944 documents—in comparison with the 4,284 volumes in a single room in Benton Hall when Mrs. Kidder arrived. The library was now housed in a beautiful new building commodious enough to provide quarters, at that time, for the Horner Museum (which had been begun 50 years earlier as a Cabinet of Curiosities), a General College Assembly Hall, and offices for three college departments. Steel stacks not originally installed because of wartime steel shortages were on order for early erection.

Miss Lewis's first "Biennial Report," 1918–1920, was in effect a report for Mrs. Kidder's last 2 years. It celebrated, as would be expected, the new building occupied early in the biennium. It emphasized, as had all of Mrs. Kidder's reports, the need for greatly increased book funds, recommending an annual expenditure of "no less than $18,000"—a large sum for those days. It recognized the quality and contributions of the library staff. In a graceful and felicitous paragraph, it paid tribute to Mrs. Kidder, saying: "she bequeathed to all whose lives she touched the inspiration of her great vision and her splendid life of service."

In the succeeding "Biennial Report," 1920–1922, Miss Lewis was entirely on her own. In it, and indeed in all her following reports, she pulled out all stops in urging improvement and upgrading of the library in all aspects, particularly in providing more generous funds for books. Ironically these continuous book appeals, which took many forms beyond formal reporting, were never as successful as accompanying requests for more staff. Possibly this reflected, somewhat, the non-book-oriented nature of the earlier separate land-grant colleges, in combination with the service-oriented administrative philosophy of both Mrs. Kidder and Miss Lewis.

In spite of a chronically anemic book budget, the library managed to grow healthily, if not spectacularly. Probably no library in the country achieved as much sound growth with so little money. Certainly none more. This was due to a very close collaboration among faculty members and the librarians. Miss Lewis, as had Mrs. Kidder, enjoyed the complete confidence of her faculty colleagues, and of the college administrators, too; even though, in a long-established pattern, they never supplied her with as much money as she asked for and as the library needed. Within available funds, growth emphasis was definitely and soundly placed on acquiring as much as possible of the serial literature so pertinent and essential to technical and scientific higher education and research.

Miss Lewis's sound administrative sense was reflected in the internal organization of the library. She definitely operated on a department head basis, with clearly assigned responsibilities and accompanying authority. Although her staff was small, she maintained the following full-fledged departments: Reference, Continuations, Technical Periodicals, Circulations, and Cataloging. Within a few years the Technical Periodicals Department and the Continuations Department were merged into a Serials Department, and an Order Department was added.

Two decisions made in Miss Lewis's earlier years demonstrated her far-seeing vision and her progressiveness. The first of these, taken in 1924, was to participate in a nationwide cooperative preparation of a National Union List of Serials, which required some years for fruition and much extra work on the part of the cooperating libraries. It is significant that in the entire country only one other separate land-grant college participated in this monumental effort, one of the great bibliographical achievements of the century.

There was much bibliographical trauma for the libraries cooperating in this project. They were, in the end, richly rewarded because each of them was, through participating, required to face up to a stern discipline of placing its serial holdings in first-class order. Having done this, the task of rounding out and completing sets of journals, as well as placing weaknesses and lacks in focus, was tremendously simplified. Quite certainly the substantial strength in scientific serial literature which the Oregon State University Library has been able to develop over the years was given impetus and direction by participation in the Union List of Serials project. Over and beyond this, all the cooperating libraries had the satisfaction of helping immeasurably to strengthen the research apparatus and capabilities of the country.

The second basic, far-reaching, and courageous decision taken by Miss Lewis over the protest of some of her key personnel was to launch a "long anticipated program of reclassification of the Library" from the Dewey System to the Library of Congress (LC) classification. This decision, not lightly arrived at, was taken in March of 1930 in the depth of the great Depression, when the library was struggling with staff retrenchments. At that time the collections contained 92,000 Dewey-classified volumes, each of which—with the exception of some 20,000 volumes in literature which were to be left in Dewey classification—would require re-classifying, remarking, possibly new cards, and shifting to new LC shelves. This represented several man-years of work.

Significantly again, Oregon State was among a relatively small number of academic libraries making this major change at that time. The most obvious benefits were that the Dewey System was not easily expandable to encompass an exploding and widely ramifying technical literature, and that by changing to LC, libraries could better utilize the Library of Congress cataloging as available on its printed cards.

In the 1950s, 1960s, and 1970s, numerous academic libraries in all parts of the country, some with millions of Dewey-classified volumes on their shelves, were changing to the LC system at tremendous costs. These latter-day changes have been—in addition to the greater adaptability of LC—in part because it seems likely that in any nationwide automation of libraries and their holdings, the LC classification will be dominant. While this could not be foreseen in the 1930s, all who now manage libraries that made the change early have cause to be grateful for the vision and courage of administrators before them who did not flinch before a hard decision. It was the good fortune of Oregon State College that in Lucy Lewis it had such an administrator.

Miss Lewis was definitely a professional in her approach to librarianship and its problems. She participated in the work of the professional associations. She read widely. She contributed to the literature, and she took full advantage of sabbatical privileges. The first such leave was in 1927–28, when she toured Europe and the Near East, with particular emphasis on libraries and book dealers. While she did not have much book money to spend, she was able to make some basic purchases of sets of scientific journals and to establish strategic arrangements with book dealers.

Miss Lewis was also historically minded as far as the library was concerned. Much of the history of the early library, as recorded above, is based on information gathered by her. This is particularly true for the time of the student librarians and the nonprofessional librarians. A program of collecting all library publicity in scrapbooks begun by her in 1923 has been invaluable in the preparation of the present history.

As the twenties moved toward the thirties, the library building which had seemed so adequate in 1918 was, under pressures of the growing collections and increasing enrollments, rapidly filling up. Plans for its expansion were submitted to the administration by Miss Lewis in late 1929 or early 1930. As an alternate she suggested removal of the nonlibrary agencies and offices which the building had housed from its beginning. This, she urged, should be accompanied by an extensive remodeling. No one, one must assume, would have believed in 1918 that more space would be needed so quickly.

Miss Lewis's first 12 years as librarian were solid, imaginative and professionally sound. Events were transpiring at the turn of the decade which were to have such great implications and consequences for the library and for Miss Lewis personally that these 12 years constitute a definite phase in the history and development of the library. During this time the library grew from 41,248 volumes, a total budget of $23,409, and a staff of eight, to 111,196 volumes, a total depression-shrunken budget of $48,486, a staff of 17, and a salary of $3,800 for the librarian. In the years ahead, growth was to continue modestly but soundly. In addition to this, Miss Lewis's administrative abilities and good common sense were to be tested in ways and to an extent which she no doubt had never contemplated or even dreamed.

THE UNIFICATION OF THE SYSTEM LIBRARIES

Triggered perhaps somewhat by the great Depression, decisions were being made in Oregon in the late twenties and the early thirties that were to shake its tax-supported higher educational institutions to their foundations. Under mounting pressures and rivalries among its educational institutions, the state of Oregon asked the U.S. Office of Education to make a major survey of its higher education needs and agencies. Out of this came the now well-known State System of Higher Education, with a single chancellor. A basic part of the proposed plan was the unification of the libraries of the then six state campuses into a "great common pool of books" under a system director of libraries.

The plan for the centralization of all the library facilities and resources of the new State System of Higher Education was the brainchild of Cornelia Marvin Pierce, former state librarian of Oregon, who was a member of the first State System Board of Higher Education. Mrs. Pierce, wife of United States Representative Walter Pierce and early friend and confidante of Mrs. Kidder, envisaged a unified family of system libraries, with a single budget and a director of libraries who would be in overall administrative control of all the libraries. All book ordering and cataloging would be done in a central office.

In February of 1932, Mrs. Pierce directed a statement and questionnaire about the proposed unification of the libraries to Miss Lewis and to Matthew Hale Douglas, librarian of the University of Oregon. Mr. Douglas, who had been a student under Mrs. Pierce at the University of Wisconsin Library School, responded with a six-page, closely reasoned letter pointing out the great difficulties inherent in—as well as, in effect, the undesirability of—such a plan. Miss Lewis's response was much briefer. It recognized the realities and difficulties the proposed unification would face but expressed some hope that it might, with proper support, be successful.

The upshot of these two responses was that Miss Lewis was, at the May 1932 meeting of the State Board of Higher Education, appointed director of the System Libraries at a salary of $4,682, 12% of which was to be paid by the Chancellor's Office. It followed that the Central Library Office would be located in the Oregon State Library. It was, perhaps, typical of the way things were happening in those hectic days that the first Miss Lewis knew of her appointment was when she read about it in the newspapers. It was typical of her, too, that she did not flinch before the great challenge, even though she must have been taken aback.

The launching, administration, and evolution of unification of the libraries is a story apart from the history of the Oregon State College Library. It is, nevertheless, closely and inescapably intertwined with it. For one thing, it meant Miss Lewis could not now continue to give her sole and undivided attention to the college library. For another thing, quarters had to be found for the Central Library Office in a building already growing too small for the college library by itself.

The unification of the libraries and the centralizing of many of their functions in the Central Library Office had great implications for, and required extensive adjustments and adaptations by, each of the System Libraries and particularly by the University of Oregon Library—then, as now, the largest library in the system. For no library, though, were the changes in the way of life, outlook, and philosophy as great as for the Oregon State College Library. All at once, it and its librarians, and to a considerable extent others on its staff, became central in all System Library affairs.

Oregon now became a place drawing professionwide interest and attention from academic librarians in all parts of the country. This was so because the centralization of the tax-supported academic libraries of a state was then an entirely new thing. Even now such unification is by no means common, and nowhere has it been carried out to the extent that it has in Oregon.

Even though what Miss Lewis did and achieved as director of libraries for the State System is not primarily a part of the Oregon State College Library story, it needs to be said that she responded to the larger challenge brilliantly. She had the good sense and the administrative instinct to realize that not all aspects of the unification of the libraries as spelled out in the state board's Administrative Code were workable and realizable.

The first years of the State System were a time of great bitterness and strife between the two major institutions, the University at Eugene and the State College in Corvallis. Suddenly required to adjust curriculums, personnel, goals, and ambitions to a central authority, these two institutions found themselves unwilling and mutually suspicious partners. Scars and wounds engendered by this situation are now fortunately receding into the background. Some of hardy vintage still endure.

The economic climate was definitely not favorable for launching the unification of the libraries. It was Miss Lewis's administrative genius to play the situation pretty much by ear and to recognize and concentrate on the attainable. Had she tried to implement the board's code rigidly, in its entirety, the entire effort might well have broken on the rocks of institutional pride, traditions, and ambitions. As it was, the establishment of centralized book ordering, book keeping, and the creation of a union catalog proceeded among the major libraries—if not in a spirit of joyous harmony and good will, still with mutual respect. Of all the academic aspects of the centralization of the institutions, it was the unification of the libraries that was, in the early days, most successful. It is to the everlasting credit of all of the institutional librarians, and particularly of Miss Lewis, that this should be so.

THE LIBRARY UNDER UNIFICATION

The biennial reports of Miss Lewis from 1932 on clearly reflect the impact of the unification on the library, as well as the success and high caliber of her reaction to the responsibilities which had so suddenly and unexpectedly been thrust upon her. Although she was now faced with dual responsibilities that might have overwhelmed a less able person, the college aspects of her responsibilities were fully and imaginatively met, as were also those of the State System. Immediately, her reports for the library became more detailed and full-bodied, even though she was simultaneously required, as director of all the libraries, to also make biennial accountings of the progress and problems attendant to the unification, as well as the responses, reactions, and growth of the various libraries in the new situation.

While the reports for the OSAC library gave only minimal attention to the unification as such, less really than might have been justified, it was nevertheless obvious that the unification was having far-reaching consequences for the library. There was first of all the problem of the physical housing of the Central Library Office and its limited personnel in a building which had already, as Miss Lewis had repeatedly made clear long before the unification, grown too small. In addition, the Central Office shared personnel with the OSAC library. The college order librarian also served as the order librarian for the State System on a divided salary basis. Similarly, the college cataloger was eventually given responsibility for supervising the State System Union Catalog, again on a divided salary. In addition, Miss Lewis's secretary, although entirely a College Library employee, served also as secretary for the numerous State System aspects of Miss Lewis's activities. This, in the system's formative pioneer years, required more time than the specifically College Library activities. Even more important, the assistant librarian for the college frequently was required, particularly during vacations and leaves of absence of Miss Lewis, to serve in effect as assistant director for the State System libraries.

It would seem that, under these circumstances, the library should have suffered from these added responsibilities newly imposed on an already hard-pressed staff. Actually, the reverse was true. The enlarged activities established a new outlook and a sense of achievement among all the participants. Thinking about solutions of the problems of the library now proceeded more and more in a systemwide orientation. Perhaps it was only natural growth and evolution, but the entire library staff was now also more professionally active regionally and nationally.

As had already been demonstrated in the pre-System days, Miss Lewis had proven herself to be a far-seeing and progressive administrator. These qualities and capabilities now came into full flower, undoubtedly substantially stimulated by centralization of the libraries. More staff, more space, more book money; the pressure of these continued. Over and beyond this, Miss Lewis initiated and supervised many library programs and activities which an overtaxed administrator and an already busy staff might well have left in limbo.

The staff regularly prepared book reviews for a column in the *Barometer*, at one time entitled "Book Parade" and later "Look'n 'Em Over." There were also frequent staff radio book reviews on the system radio station, KOAC. A browsing room containing the more attractive books was established. A student personal library contest was organized with prizes donated by the bookstore to the students entering the personal libraries judged to be the best. A "Friends of the Library" organization was established and promoted. A memorial book plan, which has been a substantial factor in enriching the library, was introduced. Suggestions for suitable home libraries were also developed in collaboration with the Department of Household Administration of the School of Home Economics. All this was in direct line with a long-time library concern, beginning with Mrs. Kidder, for broadening the cultural education and outlook of the students of a predominately scientific and technological college.

The progressive, forward-looking administration which Miss Lewis was giving the library was further reflected in her arranging to make the library a depository for a basic set of the Library of Congress printed catalog cards. This, too, with its attendant problems, could easily have been left in abeyance by a less perceptive administrator.

EVOLVING NEEDS ARE IMAGINATIVELY MET

The maturing and expansion of the library under its able leadership is reflected in the development of an internal series of reference tools and aids. Indexing of the *Oregon Historical Quarterly* and the *Oregon Voter* was undertaken. A bibliography of faculty publications, which later grew to State System-wide proportions, was commenced. Numerous bibliographies were prepared upon faculty request. The federal NYA and FERA depression funds available were used in expanding services and activities as extensively as the legislation permitted.

The problem of creating a union author catalog of the books in the System Libraries, one of the first to be faced by Miss Lewis as director of libraries, was attacked with characteristic imagination and vigor. Some way would have to be found to reproduce the author cards of all the libraries. Miss Lewis thought the quoted reproduction costs of commercial firms too high. The Oregon State Physics Department was consequently asked to develop copiers and mechanisms designed specifically for reproducing catalog cards. The designed equipment worked beautifully. It was immediately put into operation on a 24-hour-per-day basis. As a result, some 200,000 cards were reproduced in a 2-week period at costs far below those which had been commercially quoted.

One of the most significant activities of the late thirties and the early forties was development of a better organized program for building up the collections. A major survey of library resources and needs was undertaken in 1939 by Miss Lucia Haley, assistant librarian, to be followed in 1940 by a second one by Miss Lewis personally. These were in connection with a program of strengthening all the System Libraries, initiated jointly by Chancellor Frederick M. Hunter and Miss Lewis.

The several annual library "book grants" to the institutions flowing from this program were the major library aspects of Dr. Hunter's chancellorship. They demonstrated clearly the duality of Miss Lewis's position. She was required not only to work with the chancellor in organizing the program and in allocating funds to the various libraries, she also had to administer that portion of them allotted to the OSC library. This was done in close collaboration with the faculty. While the grants were not large, in the neighborhood of $5–10,000 to each of the major libraries in a repetitive series, they did for the first time, as far as the OSC library was concerned, permit substantial retroactive buying, particularly of scientific serial sets.

This grant money was particularly important at Oregon State, and indeed in all the libraries. This was so because, with the state's economy only slowly emerging from the deep depression of the early thirties—and with World War II ominously on the horizon—considerable retrenchment of all institutional budgets, including, of course, the libraries, had taken place.

During her high-tide days of constructive activity, Miss Lewis also found time to be professionally active. She continued to contribute to the work of the Agricultural Libraries Section of the American Library Association. In 1936 she was elected president of the Pacific Northwest Library Association. It was under her leadership that a Carnegie Grant for the establishment of the Bibliographic Center for the Pacific Northwest at the University of Washington was secured. Into the union catalog of this center went an author card for every book in the major libraries of the Northwest, including those from the Oregon State System. This regional catalog, now containing approximately 4 million cards, has been and is an integral although struggling element of librarianship in the Pacific Northwest.

Another major regional cooperative library project of this period in which the library participated fully was a survey of the library resources of the Pacific Northwest carried out by the Pacific Northwest Bibliographic Center, which Miss Lewis had helped to establish. This project resulted in a book authored by John Van Male, first director of the center, published in 1942. This book, although now obsolete, was a milestone in the history of librarianship in the Northwest. An immediate dividend was that through it, each participating library placed its holdings in sharper focus. A long-term benefit was promotion of a regional sense of cohesion resulting in a considerable elimination of duplication of resources among the major libraries of the region.

A NEW WING IS PLANNED AND ERECTED

Miss Lewis's thoroughly professional instincts were evident in her personal utilization of sabbatical privileges. During the winter of 1937–38 she used a second sabbatical leave to study library organization and buildings in the United States. A third sabbatical leave to visit library schools and libraries was taken in the winter of 1941–42.

Miss Lewis's 1937 leave was in direct preparation for the planning of a new wing to the library and for an accompanying reorganization of staff and service facilities. As early as 1928, before there was any knowledge on her part of the centralization to come, Miss Lewis had urged expansion of the 1918 building. Now, with federal funding of a wing in prospect through the Works Progress Administration, she was getting ready for specific planning. She visited and studied 37 libraries while on this leave. She came home from these visitations with expanded and concrete ideas about the expansion of the building, a major and difficult problem.

The crowding of the 1918 building had reached a stage, in the late thirties, where there was no longer room for more books on the shelves in spite of large quantities of materials having been moved to storage. There was more and more student complaint, too, about the crowded reading rooms. It was great good news, therefore, when, in March 1940, the State Board of Higher Education authorized construction of a west wing for the library. This it could do because of the availability of depression-spawned federal funds.

With money assured for the wing, Miss Lewis was able to transmit quickly to architect John Bennes well-developed plans for its construction. This projection included an eventual matching east wing and a substantial remodeling of the original building. In the early summer of 1940 work was under way. By the next summer it was nearly completed. The building was occupied and ready for use for the opening of the 1941–42 year, just ahead of the entry of the United States into World War II.

The west wing did not have the impact on the college community which the building of 1918 did. At least it did not receive as much publicity. Nevertheless, it improved and upgraded library facilities and service in every direction. It permitted the bringing together of all the technical-processing activities of the library, including the Central Library Office personnel and functions, all on the top floor. It added a handsome "open-stack" Science Reading Room and an attractive Reserve Book Reading Room. It brought total seating capacity up to approximately 900.

The wing also made possible a doubling of capacity of the public Card Catalog Room. It added a Microfilm Room, an improvised kind of faculty and graduate student study room, and an "open-stack" Engineering Room. More space for the Map Room was also now possible. Improved staff room quarters were provided and the recreational reading (browsing) room, which now received the name of Beaver Book Room, was given more and better space. The "open-stack" aspects of this reorganization and the grouping of books by subject divisions, among the first arrangements of this kind to be made in this country, were a harbinger of the complete "open-access" academic libraries which were later to arrive almost universally.

PROGRESSIVE LEADERSHIP CONTINUES

The far-seeing progressiveness which was evident in Miss Lewis's approach to library problems is shown by her realization of the great importance which microreduction of materials was to play in libraries of the future. She not only realized this, she tried to do something about it. In collaboration with Xenophon P. Smith, assistant reference librarian, and the Physics Department of the college, partner in the successful photostatic card copying of the System Union Author Catalog in 1932, she made application in 1939 to the Carnegie Corporation for money to conduct research in this important area. Early in 1940 a grant of $1,500 was received.

The resulting experiment, for which quarters were somehow found in an already overcrowded building, added its grain of sand to the evolving microreduction technology. Far greater funds than those supplied would have been required for any important breakthroughs. Millions have since then been spent by industry and foundations on this problem. The modest little effort of the Oregon State College Library foresaw the shape of things to come and was in the right direction.

One outstanding development after the centralization of the libraries, but in no way connected with it, was the greatest benefaction which had so far come to the library. This was the gift of the Mary L. McDonald Collection and Room. Mrs. McDonald, whose husband had had substantial Oregon timber holdings, first began giving the library books in 1932 as a Christmas present. This generosity quickly expanded into the gift of an outstanding collection of some 3,000 volumes of fine bindings and rare editions, as well as the furnishings of the room to house it.

In 1934, Miss Lewis and Miss Chamberlin, an instructor in interior design, planned a room for the collection, in Tudor and Jacobean design. The resulting tastefully appointed and attractive room and its books at once became, as they have since remained, an attractive feature of the library. Altogether the cost of this collection and room was approximately $16,000, significant money in those days.

UNFINISHED BUSINESS

Of all the enterprises and projects undertaken by Miss Lewis, only two were not carried to conclusion. One of these was the reclassification of the library to the Library of Congress System. In her biennial reports, Miss Lewis had continuously decried lack of progress in this important effort. In budget request after budget request she had asked for the added personnel required to get on with it in rapid tempo. Depression, retrenchments, growing enrollments, and expanding research by the college, all these evolving things kept getting in the way of funding this major project. It was less vital, in an immediate sense, to the ongoing work of the college than numerous other things, so, it was repeatedly required to give way to more urgent needs. Although Miss Lewis never ceased to press for completion, only some 36,000 volumes out of 92,000 were reclassified under her direction.

A second major thing which Miss Lewis could not bring to satisfactory solution revolved around the transfer, in 1932, of 2,432 science journal volumes from the University of Oregon Library to Oregon State College. This transfer, made in accordance with directives of the State Board of Higher Education, was one phase of the efforts to unify the State System institutions and to eliminate duplication among them. Oregon State had been designated as the Science and Technology Institution of the system. It followed, therefore, that it should, in the concept of one "great common pool of books," have in its library the major science journals owned by the State System.

The transfer of science journals, all prime basic sets, from the university to the college was accompanied by the transfer of a lesser and relatively insignificant group of materials in the field of commerce and the social sciences to the university. Both transfers were carried out under procedural regulations jointly developed by the major libraries. In spite of this, the understanding of the two libraries as to the ownership of the transferred materials was not the same. The university considered its transferred journals as *temporarily deposited* at the college. The college, on the other hand, considered them transferred on a *long-term, indefinite basis.* OSC consequently processed and treated them, including assigning Library of Congress classification numbers to them, in exactly the same way as its other journals. Both libraries included these 2,432 volumes in their annual reports of volumes owned.

The original transfers took place more smoothly and with more good will than might have been expected. It was not long, however, before the science faculty at the University of Oregon was asking to have these valuable prime journals returned. As curricular restrictions on science teaching at the university were relaxed, requests for return became more and more insistent. By the early forties a fat folder of correspondence and memoranda, mostly generated by the university, relative to return of these journals had accumulated, but no solutions had been arrived at. This is where the matter rested in 1944.

THE LAST LEWIS YEARS

Miss Lewis had never been in robust health even though she had enjoyed and participated in such rugged outdoor activities as mountain climbing. In the early 1940s she was less and less well. This is, however, in no way shown in her last "Biennial Report" (1942–44), which was as full bodied a report of constructive achievement as the preceding accountings had been.

As the biennium closed and the succeeding one began, Miss Lewis was more and more aware of failing physical and mental powers. It became increasingly clear to her that she should not continue to direct the OSC Library and State System Library affairs. The time came, on November 1, 1944, when she submitted her resignation to President Strand, effective January 1, 1945. With characteristic candor, she said, "I am not well enough to continue the work as it should be done." Concerned for the future, she requested, "that you make recommendation to the Chancellor and the Board for someone to fill this position, important to Oregon State College and to the System."

Miss Lewis had, at the time of her resignation, been continuously associated with the library for 34 years—all but nine of them as librarian. When she joined the staff in 1911 there were some 20,000 library volumes housed in three rooms in Benton Hall. When she assumed the librarianship in 1920 the collection had grown to 41,428 volumes, the staff numbered eight, and a handsome new building had been achieved. At the time of her ascendancy to director of the System Libraries, the OSC Library owned 111,196 volumes administered by 16 full-time librarians. When she relinquished the reins in 1944, she left as the good legacy of her 24 years as librarian, an expanded building and a carefully selected and soundly organized collection of 201,025 volumes serviced by a high caliber staff of 28 full-time staff members plus student assistants numbering approximately 100 during the academic year.

The rich fruits of Miss Lewis's labors and her administrative instincts were, when she retired, all about for all to see. While on the surface they may have seemed taken for granted, they were deeply appreciated by all who knew. This was evident in letters which came to her, from within the State System and throughout the profession. A warm resolution of tribute expressing "our appreciation of her leadership over the years" was sent to her early in 1945 by the State System Council of Chief Librarians, which she had organized and over whose meetings she had presided.

Miss Lewis was honored by her immediate library staff, joined by faculty colleagues, at a dinner on February 4, 1945. She was elected as an honorary member of the Pacific Northwest Library Association, for which she had served as president. Her crowning honor came in June of 1945 when a grateful and appreciative Oregon State College conferred upon her an Honorary Degree of Doctor of Library Science. In doing this the college did not recognize, as it well might have, her brilliantly constructive contributions in bringing its own library to maturity. It chose rather to emphasize her work in "leading and coordinating a program of interlibrary service that has had influence on library cooperation and development throughout the country."

It is clear from the records of constructive achievement which they left behind them, some of it in substantial bricks and mortar, that Oregon State College was doubly blessed in its first two professional librarians, Ida Angeline Kidder and Lucy Mae Lewis, who during the years from 1908 through 1944 brought its library from insignificance to regional and national stature. Mrs. Kidder's contributions, while practical and concrete in a truly pioneering sense, were characterized by her outgoing enthusiasm, her joy and frequent expressions of pride in her work, and her remarkable ability to win the esteem and affection of all, and particularly of young people. Her legacy was as much of the spirit as of the tangibles.

Miss Lewis was very different. She was more reserved, less given to articulate enthusiasms, less well known among the students. She was, nevertheless, highly respected by all on campus, within the State System of Higher Education, and throughout the library profession of the nation. The outstanding characteristics of her work were practicality, common sense, and a progressiveness that in retrospect seems almost prophetic, plus high professional ideals and a very real administrative genius. Hers was not the flair for the dramatic and emotional so predominant in Mrs. Kidder. She was nonetheless a person who felt and thought deeply.

Miss Lewis continued to make her home in Oregon after her retirement. When failing health no longer permitted her to live in her Depoe Bay home beside her beloved sea, she and her sister moved to an apartment in the Benton Hotel in Corvallis. It was there that she died on December 5, 1951, at the age of 72. Many letters of appreciation for the rich and constructive life she had lived, written at that time, repose in her personal file in the Oregon State Library. One of these came from Frederick M. Hunter, then honorary chancellor of the Oregon State System of Higher Education, under whom she gave the best of her many good years. Miss Lewis was, he wrote:

> . . . a marvelously fine Librarian, an excellent diplomat and administrator, and a far-seeing leader in the field of library science. She rendered a great contribution to the Library organizational structure of the State System. . . . The present status of the Libraries of the System is in great measure due to the fine foundations laid by her. . . .

The Third Administration

The search for a successor to Miss Lewis was, as she had hoped, initiated promptly. The choice rested finally on William H. Carlson, associate librarian at the University of Washington. On March 1, 1945, Mr. Carlson assumed the dual duties of librarian of Oregon State College and director of libraries for the State System of Higher Education. He was at that time 46 years old.

A native of Nebraska, Mr. Carlson was graduated from the New York State Library School in Albany in June of 1926. He was first employed as supervisor of departmental libraries at the University of Iowa. He served next as librarian at the University of North Dakota and then, for a year, as visiting librarian at Vanderbilt University in Nashville, Tennessee. After Vanderbilt came advanced study, on a Carnegie Fellowship, at the School of Librarianship of the University of California, Berkeley, where he qualified for a master's degree in May 1937. From Berkeley he went to the librarianship of the University of Arizona. He left Arizona in 1942 to become associate librarian of the University of Washington.

Like Mrs. Kidder, Mr. Carlson came to the Oregon State College librarianship fresh from the outside. Unlike her, he found a well-organized, competently staffed, and reasonably well-housed library. At one point, some similarity remained: The library was still financially undernourished in relation to its rapidly growing and evolving college, soon to be designated a university.

The problems that faced Mr. Carlson were to keep a well-organized and smoothly functioning library running well and, if possible, to add impetus, direction, and in accordance with the changing times, new horizons and goals to its operation. This applied quite as much to his dual duties and responsibilities as director of libraries for the State System as to the college librarianship. He very definitely took over a house-, or more accurately, houses-in-order. The College Library, when he assumed command, contained 201,025 volumes and had an operating budget of $92,762. Twelve percent of Mr. Carlson's beginning salary of $5,000 was, as had also been true of Miss Lewis's salary, paid by the State System of Higher Education. Only $17,352 was available annually for acquisition of materials.

Mr. Carlson began his librarianship by setting down five objectives or goals toward which he would strive. These objectives, as Mr. Carlson was increasingly to realize, were only a formalization of the principles which had guided Mrs. Kidder and Miss Lewis over the previous 37 years. As the effort to endow them with richer blood and stronger sinews went on, one thing continued unabated. Possibly it proceeded at an even higher tempo. Requests for more of everything, money, staff, space, continued to reach OSC and State System administrative officers in the same uninterrupted refrain which had gone on continuously since 1908.

Mr. Carlson early addressed himself to the unfinished business of the Lewis regime. Indeed, one facet of this could not be escaped. Within weeks of his arrival he had before him, in his capacity as director of libraries for the State System, an official request from Acting President Hollis of the University of Oregon and President Strand of the college to adjudicate the controversy over the science journals which had been transferred from the university to the college in 1932.

On May 14, 1945, Mr. Carlson presented a compromise solution, returning approximately one-half of the journals to the university and retaining the other half as the permanent property of the college. Corollary to this it was recommended that the State Board undertake a carefully developed and closely coordinated program of strengthening science holdings at both institutions.

These recommendations, including the proposal to strengthen the science holdings of both libraries, were accepted by the two institutions. They were also accepted by the State Board of Higher Education, including a commitment to increase science book funds for each library. This brought to an amicable conclusion a controversy which had endured and flourished for 14 years.

The other remaining major item of unfinished business from earlier years, completion of the reclassification of the library to the Library of Congress System, was not so quickly disposed of. Firm plans were, however, made to carry this major project forward at increased tempo. It took, however, a full decade for the reclassifying to be concluded. The end of the weary trail came finally in the late summer of 1955.

One reason this project had taken so long was that it had been considerably more than a simple reclassifying of the books. It had in effect been also a recataloging under high standards, accompanied by extensive withdrawal of obsolete volumes, of all the library resources acquired before 1932. The end result was that the library came out of the reclassifying with its resources better cataloged and organized than most comparable libraries.

PERSONNEL PROBLEMS AND TRENDS

A development which was in the making at the time Mr. Carlson assumed the librarianship was the passage of a law by the 1945 State Legislature placing all nonacademic employees of the State of Oregon under State Civil Service. This act had only limited impact on the library in the beginning because at that time nearly all the full-time employees of the library were professional librarians. The act, nevertheless, had great implications for the future.

While the act, as administered, was a source of irritation and inconvenience to the library administration, it brought more benefits than disadvantages to the library. It could, however, have been different, disastrously different. This was so because there was a disposition in the Civil Service Commission to consider the professional librarians of the State System of Higher Education as nonacademic personnel and therefore subject to Civil Service regulations. This would have meant loss of faculty status, lower salaries, and tremendous handicaps in both recruiting and retaining professional personnel.

Escape from these grave threats is essentially a story of the State System Libraries as a group. Mr. Carlson, as director of libraries for the system, was early involved in the interpretations and defense of the academic status of professional librarians. For this present history it need only be said that the defense of the academic status of the librarians was successful on two different occasions; first when the act was placed in operation in 1946, and second when a serious effort to reinterpret it was made by the Civil Service Commission in 1952. This latter episode occupied some months of Mr. Carlson's time. Had the battle then been lost, the ensuing history of the library would have been less pleasant and the record of achievement less full-bodied and constructive.

Beginning almost immediately in the postwar period, the distressingly low professional salaries of the library began to be improved. Gradually they came closer to the salaries of teaching personnel in equivalent ranks. After some biennia, a long-existing gap was very nearly closed. This could be so because the library happily shared fully in all funds available for upgrading academic salaries of the college generally. To some degree these improvements were only running in order to stand still. The library salary scale did, nevertheless, improve substantially in relation to purchasing power.

The evolving and improving salary scale placed the library in good competitive recruiting status nationally. As a result, it was possible to bring some of the most promising young people entering the profession onto the staff. It was recognized by Mr. Carlson that these young people could not all be held and that the Oregon

State Library would to a degree be a training ground for promotion elsewhere, as indeed it has proved to be.

The 1950s were marked by the retirements of four staff members who had been key persons under Miss Lewis in the pre-System days. In 1952 Miss Lucia Haley, long-time and able assistant librarian, reached the retirement years. Mrs. Elzie V. Herbert, head order librarian for both the OSC Library and the Central Library Office, relinquished her duties in January 1953. Miss Carrie Thory, long-time secretary and the most knowledgeable person on the staff on the procedural complexities of both the Central Library Office and of the College Library, retired effective January 1, 1954. Miss Bertha Herse, chief reference librarian, who began her services in 1911 at the age of 20 as a clerical employee, retired on July 1, 1957. Her service record of more than 40 years was one of the longest in the history of the college.

There were, with the older librarians reaching the retirement years, a number of key appointments made by Mr. Carlson. One of these—the appointment of Rodney Waldron as administrative assistant on October 1, 1954—would, as it turned out, loom large in the future progress and administration of the library.

STRENGTHENING OF THE BOOK RESOURCES

Under Mr. Carlson's leadership the library continued to grow soundly and healthily, if not spectacularly. At no time were funds available to the extent so urgently requested and needed, nor in amounts being spent in many comparable libraries. Mr. Carlson, in relation to the times and needs, was not much more successful than his predecessors had been in convincing the college/university officials that the development of an academic library requires money in large amounts. The book budget did, of course, move upward. Occasionally there were leaps forward in amounts which were considered great by university administrators. This was, however, again in relation to need and to the rapidly expanding university curricular, graduate, and research programs, not much more than running in order to stand still.

Funds over and above the regular book budget did accrue to the library from various sources. An important development was that the Chancellor's Office in 1954 began regularly allocating a portion of the rising amount of science research contract overhead funds to the library for book purchases. To the credit of State System and college administrative officials, the Library of Oregon State College (as indeed of the other major System Libraries) was among the first in the country to be assigned a portion of science research overhead contract funds. The importance of this systemwide policy to the OSU Library is shown by the fact that by 1963–64 the annual transfer had reached $37,546, more than twice the total annual book budget, from all sources, 20 years earlier.

An indication that the university administration was continuously mindful of the need to upgrade library resources is that frequently, at fiscal year ends, sums of money in addition to the regular budget (sometimes large sums) were made available to the library. While this procedure was somewhat unsettling to the

Order Department, the degree of need was such that the library nearly always had on hand desiderata lists which, sponge-like, quickly absorbed all extra monies. These lists-in-waiting resulted from a close collaboration between the library and faculty which had been maintained and cultivated from the time of Mrs. Kidder onward.

One significant aspect of book selection policies and practices of the fifties was the formulation in 1950, in accordance with a project of the State System Council of Chief Librarians, of a carefully thought-out statement, "A Policy for Acquiring and Selecting Materials." This document, formalizing and further developing existing selection policies, helped to give disciplined direction and growth to the library resources, with a particular view to not duplicating expensive and little-used materials falling more specifically in the curricular and research areas and interests of the other System Libraries. The cumulative results of these statements by all the libraries helped the system to acquire richer library book resources and strength, individually and as a system, than would have been possible without such a coordination of acquisition policies.

The growth of the library during the Carlson years was characterized by a very rapid increase in the number of journals and other serial publications. From 916 journals subscribed for in 1945–46, Mr. Carlson's first year, these subscriptions had risen to 2,911 by 1965. This rapid increase resulted more from the publication explosion in research and educational fields than from calculated policy. It took place under a clear realization that it was incumbent on a predominately technical and scientific university such as Oregon State to acquire the rapidly multiplying leading journals in its curricular and research areas.

Because of the rapid increase in essential journal literature, the library was, in the mid-1950s, spending about three-fourths of all its book money for journal subscriptions and their binding. From this time on, as greater emphasis was placed on acquiring materials in the humanities and social sciences, the percentage of funds devoted to serial acquisitions began to decline.

TELLING THE LIBRARY STORY

Mr. Carlson continued and accentuated the public relations policies of Mrs. Kidder and Miss Lewis. A conscious effort was made to furnish reporters from the *Barometer*, its editors directly, and also the Department of Public Information newsworthy information about the library. The scrapbook begun by Miss Lewis was carefully maintained. In retrospect, it reveals a very good library press both in news and in editorials. This scrapbook has, of course, been a gold mine in the preparation of this history.

In his first year Mr. Carlson began a policy of prefacing the monthly "New Booklist," which had been distributed regularly to the faculty ever since the later Kidder years, with a variety of commentaries. These monthly essays proved to be an excellent means of stimulating faculty and student interest in the library.

While this prefatory page was designed to promote the library and tell its story, the comments ranged more and more over the entire gamut of man's time on Earth. Always this was in some library-connected context. During his tenure, Mr. Carlson wrote 218 of these essays, not missing a single month. A considerable national mailing list gradually evolved, extending in a few instances to libraries in foreign countries. After Mr. Carlson's retirement, the Oregon State University Press published, in 1967, a selection of these essays in book form, under the title *In a Grand and Awful Time; Essays from the Librarian's Desk on Twentieth Century Man and His Books.*

FRIENDS OF THE LIBRARY AND GIFTS

The Friends of the Library group which was organized during Miss Lewis's last years continued to be emphasized throughout Mr. Carlson's librarianship. Annual banquets of the Friends were held regularly. For these the library was fortunate in being able to attract a distinguished series of speakers including the then secretary of state, Mark Hatfield, later to be governor and senator. Other speakers were drawn from among historians, scientists, doctors, clergy, bankers, publishers, authors, and college presidents.

The Friends group was essentially a low-pressure organization, but it provided much good library copy and favorable publicity. Although it cannot be demonstrated that any significant gifts have come to the library solely through the Friends, members of the group were continuously active in seeking gifts. One such, promoted by a Friend, was the extensive and notable private library on comparative religions collected by William H. Galvani, a Russian emigre. This collection, received in 1947 by final bequest, contained 5,500 volumes, many rare and unique.

Another outstanding gift of the 1948–1951 years was the private library of some 3,000 volumes of Mrs. W. F. Burrell of Portland. When Mrs. Burrell died in 1951, the library became her residuary legatee, receiving the remainder of her library and her Portland home.

Many lesser gifts came to the library in connection with the Friends group. While the library did not attract gifts to the extent of some comparable libraries, gifts did—both in earlier and particularly in later years—continue to come to it in a variety and in amounts which added substantially to its strength.

Particularly valued were books which continued to be received under the Memorial Book Plan initiated by Miss Lewis in 1943. These were for the most part small gifts, often only an individual book, given in memory of friends and colleagues. All such books were, as they continue to be, marked with a special Memorial Book Plate. Approximately 4,000 volumes have been added to the library through this plan.

MAKING THE UTMOST OF THE 1918 BUILDING

As enrollments grew apace and as publications essential to the teaching and research of the college increased and proliferated, the building which had been so ample in 1918 came under ever greater pressures. Adding impetus to these increasing pressures was the fact that the college, long a university in fact, was officially so designated in 1961. Expansion of storage facilities in nearby Shepard Hall to include the entire basement provided but scant relief. The continuing and unrelenting battle for space required further substantial emergency adaptations and changes.

The history of the mid- and late-1950s was one of a series of piecemeal expedients to house the collections and still leave some places for readers. One by one the pleasant reading alcoves in the Science Room in the west wing of 1941 gave way to books. Corners and walls of the stacks were lined with books. The little-used hand lift in the main stacks was sacrificed and filled with books, providing a surprising amount of extra shelf space. Books intruded into the plenum fan room, a good many thousand of them. Even the toilet in the Science Room was offered up on the sacrificial altar, providing its little bit of additional shelf space. In these varied processes, about 200 reader stations were lost in the face of rising enrollments.

In 1956 a major reorganization which it was hoped would provide more than temporary breathing space was evolved for a regrouping of the Public Service facilities of the library. This soundly conceived plan, a product of many minds, included establishment of an open-access Agriculture Reading Room equivalent to the Science and Engineering Rooms.

Another major feature of the reorganization was bringing the Central Reference Department and the Public Catalog down to the first floor, opposite the new Agriculture Room. The current periodicals were moved onto the floor of the Main Reading Room. The Picture Collection, the Map Room, and the Microfilm Reading Room—all these were relocated.

From a service standpoint the reorganization was far more successful than anyone had thought possible. There were costs, however, other than in dollars. An additional 275 reader stations were lost. This, plus 140 seats sacrificed in earlier intrusions of books into reader space, brought available seating down from the 900 reached with the opening of the west wing to 575. The library, in proportion to enrollment, was now no better off for reading space, really less so, than it had been in Benton Hall when older students had complained about finding seats preempted by the "green-cap" crowd.

A NEW LIBRARY BUILDING

With the remodeling and reorganization of 1956–57, the ultimate in space utilization in the old building had been reached if readers were not to be crowded out entirely. It had for some years been clear that the east wing envisaged when the west wing was erected would be only a stopgap solution. Mr. Carlson began urging as early as 1950 that these plans be abandoned in favor of an entirely new building. By 1952, the college had accepted this thinking.

The next few years were marked by strategic maneuvering for a high priority rating for the new structure as well as a site for it. The rapidly growing university was faced with many needs. Practically all departments and agencies were clamoring for more space. Competition for building priorities was intense. This situation required more than the librarian to plead the cause for the library. Since the 1890s there had not been a Library Committee, possibly because of a close collaboration between faculty and librarians in what might be termed a "committee of the whole" situation. After some reversals and losses in the battle for priorities, Mr. Carlson felt that more direct faculty support and help was now needed. He consequently suggested to President Strand that a Library Committee be established. This was done in the fall of 1959.

The new committee, appointed as an agency of the Faculty Senate, took up the battle for a new library building with vigor. In January of 1960 it presented to the Campus Facilities and Use Committee a major, 17-page document, "The Case for a New Library Building at Oregon State College." Whether this document was the final determinant or not, early in 1960 the library building was assigned a first college priority in the legislative askings for the 1961–1963 session. More important than this, largely because of the document of need prepared by the Library Committee, the Chancellor's Office assigned the first priority for all State System building construction to the OSU Library. The library was also now assigned a choice site.

Matters had now proceeded to the point where architects could be selected. This all-important decision was left largely in the hands of Mr. Carlson and his staff. The choice rested finally on Hamlin and Martin of Eugene. In July of 1960 their appointment was made official by State Board action.

In preparation for the planning, Mr. Carlson had hopefully inspected about a dozen of the newer library buildings in all parts of the country. With a high building priority finally assured he proceeded to prepare a 19-page document, "A Program for the Erection of a New Library Building at Oregon State College." This projection, mimeographed under the date of April 18, 1960, delineated the spacial requirements as well as the spirit and nature of the building desired. It permitted the selected architects, when appointed, to proceed quickly with the planning.

As an early step in the planning process the architects were sent on inspection trips to buildings selected by Mr. Carlson. By September the basic concept of the building had pretty well emerged. The preliminary plans were approved by the State Board's Building Committee on October 24, 1960. The requested building, presented as the first phase of a much larger building, was projected at 128,230 gross square feet and a budgeted cost of $2,385,000 including equipment. Capacity was estimated at 590,000 volumes and 1,600 reader stations.

The building request was placed before the State Legislature on March 1, 1961. The ensuing weeks were a time of trauma and fretting in the library as the political and fiscal winds out of Salem blew hot and cold. A particularly critical eye was cast on the proposed air conditioning, something new in the buildings of the Oregon State System of Higher Education. All efforts and defenses were finally crowned with success when the legislature, on April 21, 1961, approved the board's capital construction program with the library appropriation intact.

The total concept projected a second unit composed of a fifth and sixth level adding 58,000 square feet, and a third and final unit in an "L" addition to the northeast. This was to be carried on vertical steel uprights with the lower floor coinciding with the third floor of the first unit. The complete building was envisaged as containing approximately 258,000 square feet with seating capacity for 3,500 users. As a further expansion of library space, it was planned that the area north and west of the new structure would be reserved for an undergraduate library utilizing the arcade walkway to the new building.

A happy day, marked by suitable informal ceremonies plus picture taking, was the ground breaking on May 1, 1962. The completion date for the building was scheduled as August 1, 1963. Had there not been a strike of iron workers this date would have been met. Actually the building was not totally ready for occupancy until early November.

The library was now faced with a major decision: whether to occupy the building floor by floor, with the university in full operation, or to wait and move in a crash operation during the Christmas holidays. Months of planning had been devoted to the moving. In the certainty that everything was well organized and that the library could function even as it moved, the decision was made for occupancy as fast as the building was available.

The moving was launched on September 5, 1963, with the entire staff participating symbolically. Entirely by coincidence this happened to be Mr. Carlson's 65th birthday. Some trucks of books were assembled at the main foyer entrance of the old building. Each staff member took a few books from these trucks in call number sequence. With Mr. Carlson leading the way, the staff marched single file in sequence across campus and into the new building, each depositing his or her books, in order on the allocated shelves.

For the ceremonial beginning of the move, Mr. Carlson carried the earliest accessioned book in the library, Francis Parkman's *The Jesuits of North America.* He also carried, symbolically, as a companion volume, a copy of the Bible.

The moving days of September–October were busy and arduous in the extreme. All associated with the move, which went forward efficiently under the general supervision of Rodney Waldron, associate librarian, gave yeoman service. So carefully planned was everything that books were serviced to the public right off book trucks as the move progressed. Heroines of the move were a staff of coed workers outnumbering the boys. It was clear, and so stated by some of the student workers, that they were enjoying helping with what they recognized as an historic occasion.

By November 9, all units of the library had been moved and all resources reshelved. This included bringing books out of storage from various places about the campus. There followed now a period of shaking down in the new home and indoctrinating users, students, and faculty in the use of a completely open-access library.

FORMALITIES AND CEREMONIES OF THE FIRST YEAR

During the winter and spring of 1963–64, the building was, in various ways, formally introduced to the immediate academic community and to the larger library community. The big and crowning event of the first exciting year of service for the building was its formal dedication. This happened on May 8, 1964—with President Jensen presiding and with Congresswoman Edith Green and Tom Buckman, director of libraries at the University of Kansas (who had his first position at Oregon State), as the principal speakers. Also participating in the program was Robert Kerr, son of former President Kerr, who in behalf of the family expressed, briefly and felicitously, appreciation for the naming of the building after his father.

Architects King Martin and Claire Hamlin were recognized for their signal contributions in creating what was now widely recognized as a graceful and functional library plant. Also recognized were the two university artists, Wayne Taysom and Nelson Sandgren, who had done so much to add grace and beauty to the new structure; Taysom through his distinctive bronze casts of alphabetic characters in ten systems of writing as well as the Plaza Fountain, and Sandgren through four interpretative mosaic murals of striking beauty.

In preparation for the dedication, a brochure of the building had been prepared. After the dedication, the proceedings were published in a distinctive booklet. Both these publications were widely distributed to librarians and others throughout the country and, to a limited extent, abroad.

With so many pleasant functions and formalities of its first year in the new building behind it, the library, and the librarians along with it, settled down to active and efficient service to students, faculty, and researchers. It was by now clear that this new library home was successful beyond expectation and that through it the university had gained additional effectiveness and stature.

TEACHING USE OF THE LIBRARY

The need to indoctrinate students in the use of the library, which had been an abiding concern of the library from the time of Mrs. Kidder on, was not lost sight of in the Carlson regime. The time was long gone, however, when all freshmen students could be given formalized instruction in use of the library. The teaching of "Library Practice" on a selective basis, which had been carried on well into the Lewis years, was also no longer practical.

A variety of what may be termed mass approaches to giving students a first-hand knowledge of the library and how to use it were undertaken. These included a lecture to all freshmen English sections, using slides, some of which had been made under Miss Lewis. Various key members of the staff participated in this instruction. In addition, members of the library staff went out to lecture to English classes and others, on a somewhat limited basis, as requested.

Much time and planning went into developing an instructional moving picture on the use of the library. This did finally result in the production of a video tape on the library under the direction of Mr. Waldron, who gave yeoman service to this essentially pioneering enterprise. In spite of all the planning and work, this proved to be a largely abortive effort, due in considerable part to deficiencies in the media used. The experience was, nevertheless, to prove profitable eventually.

Gradually the library came to the view that instruction in the use of the library could not be effectively offered en masse. It seemed increasingly evident that the time a student learns about using the library is when he is motivated by specific need. In this belief, the library concentrated on producing a carefully prepared "Undergraduate Student Handbook." This guide to the library and how to use it went through a variety of editions. It was and continues to be an effective agency in familiarizing students with the library and its resources. It was used successfully in library lectures to individual classes, which continued to be offered as requested by instructors.

PROFESSIONAL ACTIVITIES AND CONTRIBUTIONS

At Oregon State Mr. Carlson continued an already well-established pattern of professional activity and writing. His master's dissertation for the School of Librarianship at the University of California in Berkeley was published by the University of California Press in 1938 under the title *Development and Financial Support of Seven Western and Northwestern State University Libraries.* While at the University of Washington Mr. Carlson served as a member of the Post-War Planning Committee of the Association of College and Reference Libraries. The report of this committee was published by the American Library Association in 1946 under the title *College and University Libraries and Librarianship: An Examination of Their Present Status and Some Proposals for Their Future Development.*

Mr. Carlson's publications increased substantially during his time at Oregon State. Among his writings was a history of the Association of College and Reference Libraries, prepared for an organization manual of the association published in 1956. At the time of his retirement Mr. Carlson's publications, professional and nonprofessional, numbered over 80 items.

Mr. Carlson carried a number of major professional responsibilities and assignments while at Oregon State. These included presidencies of the Association of College and Reference Libraries in 1947–48 and of the Pacific Northwest Library Association in 1952–53; and in the latter year, of the Library Education Division of the American Library Association. On the local level he served as president, in 1955–56, of the Honor Society of Phi Kappa Phi. Mr. Carlson also served as president of the Corvallis Kiwanis Club in 1948.

Perhaps the most important campus committee assignment Mr. Carlson had was to serve, during the 1951–1962 years, as chairman of a Committee on Committees. This committee was concerned with the delicate and sensitive area, brought to the fore by the rapid growth of the university, of identifying those committees concerned with administrative matters and therefore assignable to the Administrative Council, and those concerned with university policy and thereby arms of the Faculty Senate. In this study process the Committee on Committees itself became an agency of the Faculty Senate. Its work and recommendations resulted in restructuring and placing in clearer focus the entire governmental organization and structuring of the university. The Organization Chart recommended by the committee, as adopted by the senate with some modifications, was published in the 1960–61 "Faculty Handbook."

A significant regional assignment for Mr. Carlson was the chairmanship in 1954–55 of a Library Development Committee of the Pacific Northwest Library Association. In this capacity he prepared, with committee assistance, a Library Development Project for the four states and the province which he and Willard Ireland of the British Columbia Department of History and Archives (then president of the PNLA) placed before the officers of the Ford Foundation. This grant request was accompanied by supporting letters from leading educators and the government officials in the four states and the province. In March of 1955 the foundation responded to the request with a grant of $60,000. The ensuing development studies, extending over a 2-year period from July 1, 1956, were carried out under the direction of Dr. Morton Kroll. They resulted in a four-volume publication, *Library Development Project Reports,* published by the University of Washington Press in 1960–61.

A continuing dual professional and citizen responsibility of the 1955–1963 years for Mr. Carlson was service as a trustee of the Oregon State Library in Salem. During 1957–1959 he was chairman of the board. This service coincided with a particularly significant period in the history of the library, marked by the retirement of Eleanor Stephens, the librarian, and the appointment of Eloise Ebert as her successor. It was a time of rapid growth and expansion of the role of the library under the stimulation of the Federal Library Services Act. There was additional interest in this assignment for Mr. Carlson because the State Library had been so closely related to the OSU Library. It was from the State Library that Mrs. Kidder came to assume the college librarianship. It was in the mind of Cornelia Marvin Pierce, early state librarian, that the unification of the libraries of the Oregon State System of Higher Education—so outstandingly important in the history of the OSU Library—was conceived.

As had Miss Lewis before him, Mr. Carlson availed himself of and profited from sabbatical privileges. In the autumn quarter of 1950 he was on leave to direct the expenditure of a special book grant at the library of Dillard University of New Orleans. This institution had been created, largely with gift money, to provide higher education for black people. In the summer of 1957 Mr. Carlson used a second sabbatical to visit and study the libraries of northern Europe, with emphasis on the Scandinavian countries.

The Carlson regime was a time of widespread professional activity for the library staff generally. Among the more outstanding assignments, Miss Irene Craft, serials librarian, was a member of a select national team which in 1951 carried out a major evaluation of the U.S. Department of Agriculture Library. Stuart Forth, later to be a director of libraries at Pennsylvania State University, served as secretary of the Pacific Northwest Library Association while he was administrative assistant at OSU. Donald Hunt, who was to become director of libraries at San Jose State College, was active in the management of the Pacific Northwest Bibliographic Center. Rodney Waldron was increasingly involved in the affairs of the Pacific

Northwest Library Association, as treasurer and in other capacities. These activities were to lead to his election as PNLA president for the year 1965–66.

When Mr. Carlson surrendered command of the library on July 1, 1965, it contained 487,327 volumes as compared with 201,025 when he assumed the controls. The budget had increased from $93,589 to $644,689, with $214,602 allocated for the purchase of materials. Mr. Carlson's salary had advanced during the years from a beginning $5,000 to $18,000. As was true of Miss Lewis, 12% of this salary was paid by the State System of Higher Education. The professional staff had increased from 1 to 32.

Mr. Carlson's retirement from the librarianship was marked by a "Recognition" dinner attended by approximately 250 people from the campus and throughout the Northwest. The chief speakers were President Emeritus A. L. Strand, who had had the leading part in bringing Mr. Carlson to Oregon; and Dr. Carl Hintz, librarian of the University of Oregon, who had been designated to succeed Mr. Carlson as director of libraries for the State System of Higher Education.

Mr. Carlson retired only from his administrative duties. Arrangements were made by Chancellor Roy Lieuallen, President James Jensen, and Dr. Carl Hintz for him to continue to serve the State System of Higher Education as a library planning and research associate.

One of Mr. Carlson's last acts as librarian was to write a final essay, the 218th in the series, for the "New Booklist" of the library. In doing this he used one of the very few lines written by the poet Carl Sandburg in his ancestral tongue of Swedish: "Tiden går och vi går med den" (Time goes and we go with it!).

The Fourth Administration

By the time of Mr. Carlson's retirement, appointive procedures for key university personnel had reached an elaborate and sophisticated stage—also it must be honestly said, one much more cumbersome. In accordance with the newly established university procedure, a special committee was appointed to search for a chief librarian.

This committee evaluated and screened names until it arrived at four men, one of whom was Mr. Waldron. During the late spring and the summer various negotiations were carried out with these four persons, involving trips of two of them to the campus for rounds of interviews. The results of this elaborate and exhaustive search was that in August of 1965 Mr. Waldron was offered the librarianship at a salary of $17,500. He was at the time of his appointment 46 years old, the same age as Mr. Carlson had been when he assumed the librarianship.

Mr. Waldron, although born at Newberg, Oregon, spent his early years in Canada and on Bainbridge Island in Puget Sound where he was graduated from high school. He was caught up, as were all the able-bodied young men of his generation, in World War II. Beginning as a private in the Infantry he survived a number of shooting engagements in the Pacific Theater, emerging unscathed as a master sergeant. With the help of the GI Bill he attended Longview Junior College and later the University of Denver where he qualified for an undergraduate bachelor's degree and later for a master's degree in librarianship.

Mr. Waldron's first professional position was as a cataloger for the Missouri State Historical Society. From there he went to the University of Idaho as general assistant and archivist. At Idaho he quickly advanced to assistant librarian in charge of Readers' Services. He left Idaho in 1954 to become administrative assistant to Mr. Carlson. From this beginning he advanced in orderly sequence to assistant librarian, then to associate librarian and a full professorship, and finally to the librarianship.

One of Mr. Waldron's first acts as librarian was to appoint Donald Hunt, head of Readers' Services, as associate librarian. Mr. Hunt too was one of the GIs who came out of the war to enter librarianship. It was clear that under Mr. Waldron administration of the library would be a team effort between Mr. Hunt and himself. Unfortunately for the library, Mr. Hunt later resigned to become director of libraries at San Jose State College.

Mr. Waldron assumed command at the end of an era in librarianship, or perhaps more accurately at the beginning of one. His was the responsibility to keep himself and the library alert to the increasingly bright promises of automation of the library processes while still maintaining operations at a high level under traditional methods. He came into control, too, at a time when the rapidly growing university was making increasingly heavy demands on the library for greatly enriched graduate and research resources and for a large increase in seats for the readers.

One significant phase of the new era that Mr. Waldron was required to face was that, in common with academic libraries almost universally, the administration of the library was increasingly circumscribed by regulations relative to personnel and management of funds. These rules emanated in part from the federal government but a generous quota was also generated by the university administration and the Chancellor's Office of the Oregon State System of Higher Education. While these bureaucratic controls created no crisis situations for the library, they obviously made management of it more difficult and at times downright frustrating.

The transition of the third administration of the library to the fourth was smooth and harmonious, as indeed all the earlier changes of command had been. One of the most significant aspects of Mr. Carlson's retirement was the transfer of the Oregon State System of Higher Education directorship of libraries from Corvallis to Eugene, with Dr. Carl Hintz, librarian of the University of Oregon, succeeding Mr. Carlson as director. This transition too took place smoothly and harmoniously. It did not have nearly as great an impact on either library as did the appointment of Lucy Lewis in 1932 as director of the then newly unified libraries. For one thing the centralized bookkeeping for all the libraries, and what remained of the centralized ordering, continued to function in the OSU Library.

The first year of the transition was particularly arduous for both Mr. Waldron and Mr. Hunt. Mr. Waldron, in addition to meeting and facing up to greatly enlarged library responsibilities, was serving as president of the Pacific Northwest Library Association in a difficult year of reorganization. Mr. Hunt was simultaneously serving as secretary of that association. For good measure, Mr. Waldron was chairman of a university-wide committee to plan suitable ceremonies and events for the University Centennial year of 1968.

A notable achievement early in the Waldron administration was a promising breakthrough in the knotty and difficult problem of indoctrinating students and others in the use of the library. This basic need had never been lost sight of from the time of Mrs. Kidder on. It had, however, been struggled with, with varying and at best only moderate success. In continuance of earlier efforts, Mr. Waldron and Mr. Hunt developed a highly successful series of still slides on the library and its use, accompanied with commentary.

The library administration had, under Mr. Carlson, closely followed the slowly evolving progress in the application of computer processes to library affairs. It remained for Mr. Waldron to bring the library directly and successfully into the age of automation.

Beginning in 1967 there was a close collaboration between the university Computer Center and the library. A systems analyst was added to the library staff and a second analyst was loaned to it by the Computer Center. A direct line cable from the center to the library was also laid. From these beginnings the library moved steadily toward an automated ordering of books and maintenance of the attendant account keeping. Early in its evolution the system became known as LOLITA—Library On-Line Information Text Access.

The new system was placed in operation on March 16, 1970, with parallel maintenance of the traditional manual procedures. Errors, when they occurred, were more often human than malfunctions or confusions within LOLITA. With accurate functioning of LOLITA clearly established, the manual system could now be abandoned. During the 1970–72 biennium LOLITA economically and efficiently processed some 30,000 book orders and 20,000 invoices. In this evolution, one less professional librarian was required than had been true 5 years earlier.

With success clearly established, the system was fully described in the literature. LOLITA was visited repeatedly by automationists, some from abroad. The system was also, on a number of occasions, demonstrated at library conferences and to library schools. A video tape program of the procedures was also prepared.

Oregon State was alone among the academic libraries of Oregon to perfect an automated system in any phase of library operation. This was in keeping with a well-established pattern of progressiveness within the library as exemplified by the early adoption of the Library of Congress Classification System, placing its professional librarians on academic status as early as 1927, perfection of a procedure for photostating library catalog cards, and the institution of open-access reading rooms when this was far from usual. As this history is written there is a strong probability that LOLITA may be extended to the other libraries of the Oregon State System of Higher Education.

As a further move into the era of automation, the library, in 1974, installed a TWX multipurpose instrument. Through this machine the library began regularly searching a number of data bases maintained by the Lockheed Information Retrieval Service in Palo Alto. Of exceptional significance was that the Lockheed Service included the NAL/CAIN Bibliography of Agriculture, which includes hundreds of thousands of citations as prepared by the National Agricultural Library.

The new library building occupied in 1963 provided only enough space to house the then existing library on a rather tight basis. This imposed on the Waldron administration almost immediately the need to press for the two additional floors of some 54,000 square feet, as planned in the original concept. Happily, a legislative appropriation of $2,075,006 was made by the 1970 legislature for the projected space. Occupation of the two additional floors was completed in October of 1971. The library now had space, for the first time since the erection of the 1918 building, to house its resources comfortably. It also had an additional 1,000 reader stations and 46 more faculty research carrels. While the library could now luxuriate in adequate space for a bit, growth rates made it certain that this would not be for long. Looming clear on the horizon was the need for the originally planned third expansion.

Mr. Waldron's management of the library shared one abiding theme with his three predecessors, revolving always in one way or another around the word *more.* His biennial and budget reports, plus a variety of other continuing presentations to the university administration, stressed over and over again the need for more of everything: More space, more books, more staff, more journal subscriptions, and, in the later years, more automation—all coming down, in the final analysis, to more money.

While the burgeoning library needs of a vital and growing university were never as fully met as any of the four librarians deemed essential, they were, cumulatively, reasonably successful. This is shown by the fact that at the close of this history the total library budget had reached well over $1,500,000. Of this amount, more than $600,000 was budgeted for books, as compared with $216,000 in 1965–66. To the three librarians of the first 100 years it would have been all but unbelievable that the library would have that much money to spend in a single year.

The more generous levels of support were, as the library moved into its second hundred years, naturally reflected in a growing wealth of resources. The book collection surpassed 700,000 volumes and was steadily marching toward 1,000,000 volumes. This figure, which libraries like to dramatize, would be reached in the near future. For the Oregon State Library, throughout its entire existence a no-frills, bread-and-butter library, attainment of this much wealth of resources was truly dramatic.

By 1975 the library (see Figure 2) had come a long, long way from its first few hundred volumes in a room 5 feet square. Even more importantly it was on the march in accelerating tempo. In its increase it had outgrown at least five homes, each deemed adequate at the moment of occupation. The library's second hundred years would quite certainly be marked by more of everything—books, journals, staff, space, and certainly an increasing use of microreduction and automation. In whatever ways this would come about it would not and could not be any more exciting or basically any more satisfying than the rise of the library, during its first hundred years, from humble origins to major status.

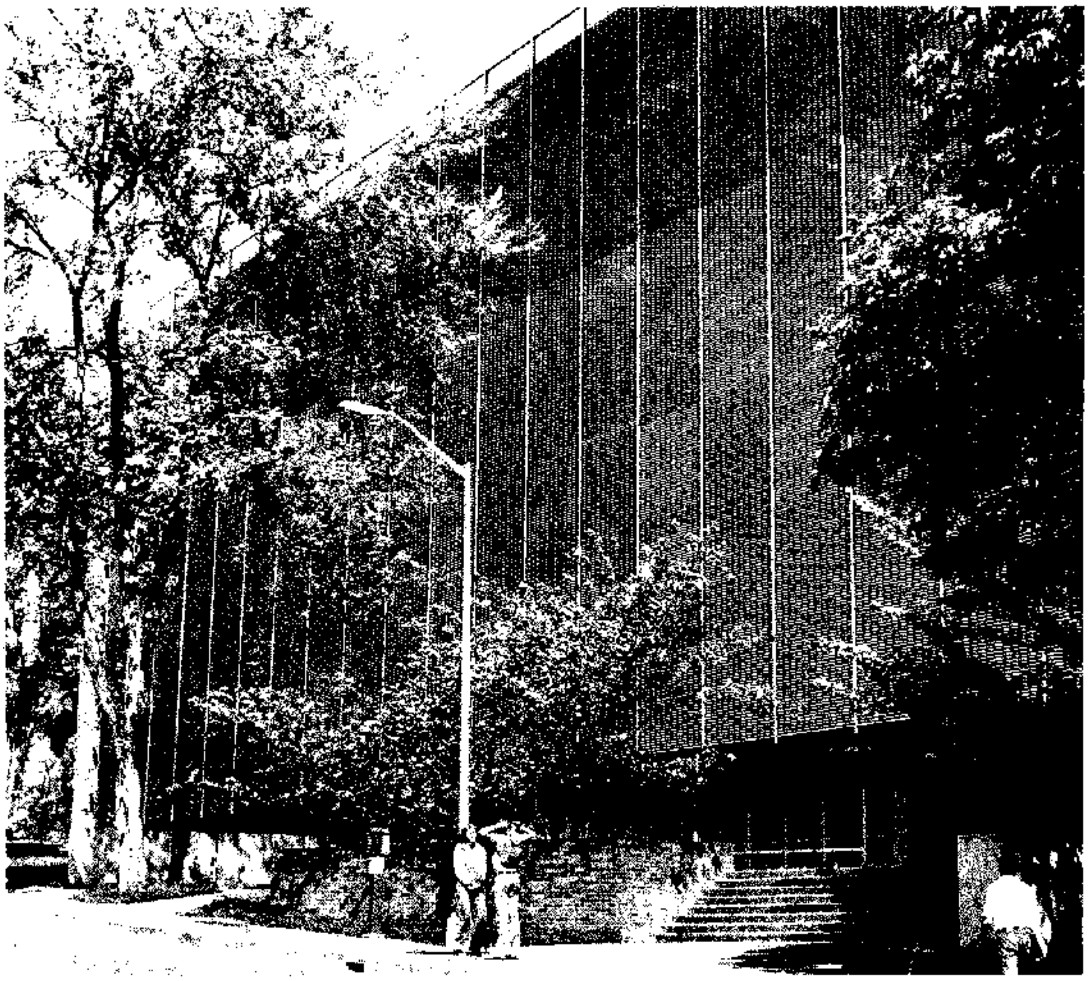


FIGURE 2. *Oregon State University Library.*

BIBLIOGRAPHICAL NOTES

This history is based on the following sources, plus a substantial amount of word-of-mouth information.

Annual Catalogs of Oregon State College of Agriculture, Oregon State College, and Oregon State University.

Biennial Reports of Librarians Ida Kidder, Lucy Lewis, W. H. Carlson, and Rodney Waldron to the president of Oregon State College and Oregon State University.

Correspondence between Ida A. Kidder, the first professional librarian, and Claribel Barnett, librarian of the U.S. Department of Agriculture.

Correspondence of Director of Libraries Lucy M. Lewis with the early student librarians and the three first full-time nonprofessional librarians.

Oregon State Agricultural College student yearbooks: the *Orange*, and later the *Beaver*.

Oregon State College Student Newspaper, the *Barometer*.

Personnel files of Librarians Ida A. Kidder, Lucy M. Lewis, W. H. Carlson, and Rodney W. Waldron.

A primary and invaluable source of information has been a publicity "Scrapbook" meticulously maintained by the library from 1923 on.

WILLIAM H. CARLSON

0-8247-2020-2