

Mr. Roos

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

Fiscal Year 1963

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

for the

FISCAL YEAR 1963

August 31, 1963

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OFFICERS OF THE NATIONAL LIBRARY OF MEDICINE

OFFICE OF THE DIRECTOR

Director

Dr. Frank B. Rogers

Deputy Director

Mr. Scott Adams

Program Director for

Scientific Publications

Mr. Daniel Bailey

Assistant to the Director

Miss M. Ruth MacDonald

Executive Officer

Mr. Ray W. Grim

Assistant Executive Officer

Mr. John P. Spain

Administrative Officer

Mr. James D. Lawrence

Personnel Officer

Miss Donna C. Aldridge

Office Services Supervisor

Mr. Joseph McGroarty

Systems Analyst

Dr. Robert F. Clarke

BIBLIOGRAPHIC SERVICES DIVISION

Chief

Mr. Seymour I. Taine

Deputy Chief

Miss Winifred Sewell

Head, Data Processing Section

Mr. Charles J. Austin

Head, Literature Analysis Section

(Vacancy)

HISTORY OF MEDICINE DIVISION

Chief

Dr. John B. Blake

REFERENCE SERVICES DIVISION

Chief

Dr. Joseph H. Roe, Jr.

Deputy Chief

Mr. Edward A. Miller

Head, Loan and Stack Section

Mrs. Maxine K. Hanke

Head, Photoduplication Section

Mr. Svend A. Andersen

Head, Preservation Section

Mr. Thomas R. Cassidy

Head, Reference Section

Mr. Charles A. Roos

TECHNICAL SERVICES DIVISION

Chief

Mr. Samuel Lazerow

Head, Acquisition Section

Mr. James W. Barry

Head, Catalog Section

Miss Emilie V. Wiggins

Head, Editorial Section

Mrs. Lela M. Spanier

Head, Selection and Searching Section

Mr. Leslie K. Falk

CHAPTER I

OFFICE OF THE DIRECTOR

For the National Library of Medicine, as Fiscal Year 1962 was the Year of the Move, so Fiscal Year 1963 was the Year the New Building Was Completed. At the time the building was occupied, in April 1962, there was an Omissions and Deficiencies List of some 377 items; all of these had been corrected by the end of FY 1963. The area for the MEDLARS computer was completed and machines were installed in March 1963. The construction of roadways and sidewalks was completed in May. The installation of the great ceramic tile mural, executed by Mr. Frans Wildenhain, was completed in June 1963. The management staff, long preoccupied with the construction program, could now turn its attention to a host of problem areas of a more familiar kind.

Cost of Construction. All of the figures on construction of the new National Library of Medicine building are not yet in, as some contractor's claims are still to be resolved. The following table will, however, give a good general accounting of the major areas of expense:

Basic Construction (Includes basic building contract, elevator plant, MEDLARS site preparation, pro-rata cost of compressor located at NIH, and roadways and sidewalks)	\$5,284,235
Architectural and Engineering Services (Includes architects' fee, GSA services, supervision)	657,619
Equipment and Furnishing (Includes stacks, regular and special furniture and equipment)	579,502
Moving (from Washington and Cleveland)	<u>49,993</u>
TOTAL OBLIGATIONS	\$6,571,349
Balance available	<u>278,651</u>
APPROPRIATION (adjusted)	\$6,850,000

Of the original appropriation totaling \$7,300,000, there was withdrawn the sum of \$450,000 for other PHS programs.

Setting aside the moving fee as a special cost, the remainder works out to a total cost of \$28 per square foot for a building of 232,000 square feet (gross).

NLM FUNCTIONS

The organization and functions statement for the National Library of Medicine, as incorporated in the Public Health Service Manual, was revised under date of March 22, 1963. Functions assigned to NLM are stated as follows:

"Acquiring and preserving books, periodicals, prints, films, recordings, and other library materials pertinent to medical and related sciences.

"Organizing library materials by appropriate cataloging, indexing, and bibliographical listing; and publishing and making such reference listings available.

"Making available such library materials through loans, photographic or other copying procedures, or otherwise.

"Providing reference and research assistance.

"Supporting and encouraging programs of publications support to assist scientific groups in the organization, analysis, and processing of medical literature.

"Acting as the principal resource within the Public Health Service for the improvement of the international exchange of published biomedical information through extramural support for the translation of foreign journals, monographs, critical reviews, announcement services, handbooks, data compendia, abstracts, indexes, etc., and the distribution of these translated materials to the American biomedical community.

"Studying the adequacy and availability of library collections of the scientific medical literature in relation to national research and educational requirements and developing plans for strengthening these resources.

"Supporting basic studies designed to contribute to the improvement of information-handling concepts and mechanisms applicable to the storage, retrieval, and dissemination of medical literature.

"Encouraging productive scholarship by supporting qualified individuals engaged in work on research monographs, critical literature reviews, bibliographies, special data compilations and historical studies relating to the medical sciences.

"Engaging, within the limits of the Library's resources, in such other activities in furtherance of the above functions as the Director, with the concurrence of the Surgeon General, deems appropriate."

FINANCIAL MANAGEMENT

Grant and Contracts. Early in the year the Library's contract workload was reviewed with officials of the Management and Appraisal Staff, Office of the Surgeon General. It was decided that the NLM must develop additional competence in contract administration, both from the contract officer and the contract financial analysis points of view. Meanwhile, authority was delegated to the Research Contracts Section of the National Institutes of Health to act for and on behalf of NLM.

Systems Analysis. A new post of Systems Analyst was established, and Dr. Robert F. Clarke reported on June 3 to begin a series of studies in this area.

Resources. In FY 1963 the Library derived its funds from several sources. The direct appropriation totaled \$3,335,000. An additional amount of \$543,760 in foreign currencies was used to carry out translation programs in Poland, Yugoslavia, and Israel. The amount of \$12,977 was made available through reimbursements from other government agencies for services performed.

Property Accountability. Under prescribed rules, the value of the NLM collections as of June 30, 1963, is carried on the books at \$35,016,845.

PERSONNEL

Staffing. In March 1962 the staffing level had reached a low point of 197 employees; on July 1, 1962, there were 211 employees on duty. The Appropriation Act for 1963 included 250 positions, but the Department carried out a policy of reduced personnel authorizations in order to absorb the higher salary costs of the new pay law within available funds. As a result, for most of the fiscal year, the Library was not permitted to have more than 237 employees on duty at any one time. By June 30, 1963, the staff of the Library stood at 240 employees. For the first time in twelve years the staffing level of 1951 (242) was being approached.

Personnel Actions. There were 93 position descriptions prepared and approved during the year. Fifty-nine were for new jobs, while the remainder replaced descriptions for jobs already established. Seventy-six promotions were effected, an increase of 58% over the prior year.

Training. An orientation program for new employees was given to 57 people. A course in telephone techniques was given to 41 members of the staff. Training in outside government facilities was given to 8 employees. Thirty-two employees took 46 courses in non-government facilities. The sum of these formal training programs required an investment of 401 man days.

Awards. Eighteen awards were made for superior performance, special service, and accepted suggestions. These awards totaled \$2,005.

INTERNSHIP PROGRAM

The 1961/62 interns, Miss Elizabeth Sawyers and Mr. David Smith, completed their program and remained at the Library in permanent positions. Mr. Smith subsequently joined the staff of the Library of Congress. The 1962/63 interns, Miss Marcia Ginguld and Mrs. Lucille Wiggin Wetherald, completed their assignments in June 1963 and were to spend the remainder of their internship year in the division of their choice.

Recruiting trips were scheduled in February and March, and three members of the NLM staff visited seven library schools. Fourteen applications for the internships were received from eleven schools. The three 1963/64 interns are Miss Nancy E. Noyes (Western Reserve), Miss Jennie Pumphrey (University of Chicago), and Miss Mary V. Wahl (Indiana University).

NLM MOTION PICTURE

The NLM motion picture was completed after more than two years of effort. In August the director of the film, Mr. Wilmer H. Kimberly of CDC, Atlanta, and his chief cameraman, Mr. Robert Craig, came to NLM to plan the completion of the remaining scenes. In September a final revision of the script was completed. Late in October camera crews completed all on-site filming. In January and again in March Miss M. Ruth MacDonald of the NLM staff, who had carried the responsibility for the film from the beginning, went to Atlanta to assist in final editing and cutting of the movie. The completed film was delivered to NLM on May 1, and the first public showing occurred on June 17 and 18 at the Second International Congress on Medical Librarianship.

SECOND INTERNATIONAL CONGRESS

Three years of preparation were culminated when the Second International Congress on Medical Librarianship met at the Shoreham Hotel in Washington, June 16-22, 1963. There were 1,015 registered members from 60 countries. The success of the Congress, evident during the meeting, is being documented by many letters and reports received by the Secretariat. The Proceedings of the Congress will be published in the January 1964 issue of the Bulletin of the Medical Library Association.

The Honorary President of the Congress was Dr. Luther L. Terry; the General Chairman was Dr. Frank B. Rogers, and the Executive Secretary was Miss M. Ruth MacDonald. Many important committee assignments were filled by NLM staff members, and a large segment of the Washington library community made large contributions to the Congress.

VISITORS

In addition to overseas librarians attending the June Congress, foreign visitors were received at the Library from Brazil, Japan, Pakistan, Thailand, Ghana, Burma, India, England, Costa Rica, Argentina, Taiwan, Bolivia, Denmark, Sweden, Mauritania, New Zealand, and Greece. Three Medical Library Association Fellows visited NLM, and housing and library programs were arranged for each of them:

August 17 -

August 31 - Mrs. Fé Ferrer, University of the Philippines

October 29 -

November 23 - Mr. Marc Chauveinc, University of Dakar, Senegal

January 20 -

February 10 - Mr. Samuel Falayi, Central Medical Library, Yaba, Nigeria

Five library school classes (University of Pittsburgh, New York State University, University of Indiana, and two from Catholic University) were received at the Library. Several classes from the Walter Reed Army Medical Center and from the National Naval Medical Center were also received.

Special tours were arranged for several groups from the National Institutes of Health and from the Division of International Health, PHS.

BOARD OF REGENTS

Drs. Gellhorn and Harkins joined the Board in the fall. The membership of the Board of Regents at the end of the year was as follows:

Dr. Norman Q. Brill (UCLA)
Dr. Harve J. Carlson (National Science Foundation)
Dr. Alfred A. Gellhorn (Columbia University)
Dr. Henry N. Harkins (University of Washington)
Lt. General Leonard H. Heaton (U. S. Army)
Dr. Maynard K. Hine (Indiana University)
Dr. Hugh H. Hussey, Jr. (American Medical Association)
Dr. Saul Jarcho (New York City)
Rear Admiral E. C. Kenney (U. S. Navy)
Dr. William S. Middleton (Veterans Administration, to March 1)
Dr. L. Quincy Mumford (Library of Congress)
Maj. General Oliver K. Niess (U. S. Air Force)
Dr. Robert M. Stecher (Cleveland)
Dr. Luther L. Terry (U. S. Public Health Service)
Dr. William L. Valk (University of Kansas)
Dr. Theodore R. Van Dellen (Northwestern University)
Dr. Warner L. Wells (University of North Carolina) - Chairman

The Board held two meetings, on November 5, 1962, and on March 29, 1963. The discussion at the November meeting centered around the problems of the NLM extramural program area, and matters to come before the Surgeon General's Airlie House Conference, held the same week. The discussion at the March meeting centered around budgetary matters, and included review and approval of the Library's tentative budget for FY 1965. The Board also inspected the newly installed MEDLARS computer area. Two committees were formed; a committee under Dr. Gellhorn's chairmanship was to formalize the Board's position on programs in the extramural area, and a committee under Dr. Valk's chairmanship was established to advise the Surgeon General on selection of a new Director, with the retirement of Dr. Frank B. Rogers from this position scheduled to occur at the end of August 1963.

CHAPTER II

EXTRAMURAL PROGRAMS

In FY 1963 the Library's proposed programs for the support of science information activities became increasingly interdigitated with the more complex problems of definition and implementation of an appropriate role to be assumed by the Public Health Service in the improvement of medical communication. As the missions of more PHS agencies were involved, focus on the Library's proposals became blurred; as a consequence, the Library ended the fiscal year where it began, without clear statutory authority and adequate funding for the conduct of those communication support functions which it believes are central to the better communication of the results of research.

As a major step toward the delineation of PHS support functions, Dr. F. Ellis Kelsey, Special Assistant to the Surgeon General for Science Information, organized the Surgeon General's Conference on Medical Communication, held at Airlie House, Warrenton, Virginia, November 5-8, 1962. The Library prepared materials for this Conference which described the NLM's proposed programs. The Bloomquist report on the status and needs of medical school libraries, prepared under NLM contract, was also distributed to the conferees. While aiding in distinguishing among the three levels of communication support apparently needed (scientist-to-scientist, scientist-to-practitioner, and scientist-to-lay public) the recommendations of the Airlie House Conference did not clearly define missions for constituents of the Public Health Service.

Actions by the National Institutes of Health served to make the support problem more complex. Testifying before the Senate Committee on Government Operations on September 20, 1962, the NIH Director announced that he had instructed each Institute Director to create a Science Information Office with responsibilities for comprehensive programming for communication support in the categorical research field of the Institute. Concurrently, the newly established NIH Division of Research Facilities and Resources was informally assigned responsibility for the development of non-categorical information centers, and for supporting the "research functions of medical libraries." These actions tended to delimit the Library's proposed functions.

Problems of program definition and liaison, in the absence of clear statutory or administrative assignment of a support function to NLM, therefore became acute. The Library made parallel efforts to obtain a delegation of authority from the Surgeon General and to revise its function statement to reflect a support role. On March 29, 1963, the Surgeon General delegated authorities to NLM, under Section 301 of the Public Health Service Act, to support research training, research fellowships, and project research grants. At the close of the fiscal year a revised function statement, paired with a similar function statement for the NIH Division of Research Facilities and Resources, was on its way to the Library.

In the absence of advance budgeting, such delegations can be implemented only by the transfer of funds. Further, they are subject to informal advice from the Office of General Counsel, Department of Health, Education, and Welfare, that the statutory authorities for PHS support of communication functions by grant are not adequate in many particulars.

With the general inadequacy of statutory authority in mind, the Library, working with the Surgeon General's Special Assistant for Science Information, reiterated its legislative needs and received informal assurance that the PHS would attempt to acquire new authorizing legislation at the next session of Congress.

At the close of the year the Library prepared copy for a report, requested by the Senate Appropriations Committee, on the needs of medical libraries. This report also indicated the deficiency of existing legislation.

Related to future program development were other activities. The Library drafted a memorandum agreement on the interchange of scientific information between NLM and the Food and Drug Administration. It undertook to draft policies relating to the uses to which the MEDLARS system would be put: recurring bibliographies, demand searches, and decentralization of the system. MEDLARS uses for research were discussed with a variety of individuals and groups.

PHS Advisory Committee on Scientific Publications. Of particular note was the Library's success in implementing the responsibilities assigned to it for the review of grant applications in support of publication. An Advisory Committee on Scientific Publications was established early in the year, and meetings were held on February 11 and May 16, 1963. Dr. Richard R. Willey was designated Chairman; other members are:

Miss Gertrude L. Annan, New York Academy of Medicine
Dr. John Z. Bowers, University of Wisconsin
Dr. John L. Caughey, Jr., Western Reserve University
Mr. G. Miles Conrad, Biological Abstracts, Inc.
Miss Louise Darling, University of California Biomedical Library
Dr. Bernard Holland, Emory University
Mr. Robert A. Harte, American Society of Biological Chemists
Dr. G. Halsey Hunt, Educational Council for Foreign Medical Graduates
Miss Eleanor Johnson, The University of Chicago Bio-Medical Library
Mr. Frederick G. Kilgour, Yale Medical Library
Dr. Granville W. Larimore, Department of Health, State of New York
Dr. Malcolm H. Merrill, California State Department of Public Health
Dr. Sholom Pearlman, American Dental Association

Program Operations. Against this transitional background, the Library devoted its energies and attention to operating and developing those extramural functions for which it has clear authority and appropriated funds. These fell into two categories: translation, and publication support.

Translation Functions. The Science Translation Program has two aspects: domestic projects conducted with appropriated dollars, and overseas projects conducted with foreign currencies made available under Section 104k of Public Law 480. Both aspects have the common purpose of informing American biomedical scientists of the results of foreign research.

By determination of the PHS Executive Officer it became necessary, early in the fiscal year, to convert existing and continuing grants to contract actions. This determination reflects the lack of clear authority for grant support of communication functions referred to earlier. The Library accordingly made strenuous efforts, and by the end of the fiscal year had successfully established five contracts for as many projects.

The principal domestic translation effort was channeled through a contract with the Federation of American Societies for Experimental Biology and Medicine. Three issues of Federation Proceedings - Translation Supplement were published in FY 1963 and have been sent to approximately 11,000 subscribers. The three issues contained 140 articles of Soviet biomedical science selected because of their research content and generally informative nature. They were chosen from among more than 5,000 journal articles which were reviewed in abstract form by members of the FASEB Editorial Board according to their specialties. This Translation Supplement has met with universal approval. A renewal contract for six months, providing for the coverage of literature other than Russian, was signed June 20, 1963.

Particular attention was paid to areas where the coverage of certain foreign biomedical literature by established abstracting services is weak. The Library established a contract with Biological Abstracts, Inc., to provide improved coverage of the Soviet biological literature relating to the medical sciences. It is expected that the coverage will be increased by 2,500 abstracts.

The earlier grants to Excerpta Medica Foundation for Abstracts of Soviet Medicine and Abstracts of Japanese Medicine were converted to a contract, beginning January 1, 1963, to provide for 5,000 abstracts from each language to be translated and published throughout the 23 subject sections of Excerpta Medica rather than in separate national series as had been done previously.

Of note is the publication Bibliography of Medical Translations, January 1959-June 1962, selected and reprinted by the Office of Technical Services, Department of Commerce, from Translations Monthly at the order of NLM, and deposited in medical libraries as a reference tool for locating translations of foreign medical articles. The Library also contracted for continuation of BMT as a quarterly publication, to provide for a "current awareness" service to medical libraries.

The Directory of Biological and Medical Research Institutions of the USSR, published by the NIH Russian Scientific Translation Program in 1958, although a valuable source of information concerning Soviet biomedical research, has long been outdated and out of print. Accordingly, NLM entered into contract with the Institute for Contemporary Russian Studies, Fordham University, to compile a manuscript for a revised Directory to be printed by the Government Printing Office.

Foreign Currency Translation Program. Arrangements made with the National Science Foundation for the contract translation of foreign scientific works in Israel, Yugoslavia, and Poland were continued during the year. The Library transferred a total of \$537,760 for work to be done under these foreign currency contracts authorized under Public Law 480, Section 104k. The following titles were received from the Program for Scientific Translations in Israel in FY 1963:

Curative and Preventive Aspects of Public Health Services for Rural Population, Rozenfel'd, I. I., Moscow, 1955

Evolution of the Function of the Cerebellum and Cerebral Hemispheres, Karamyan, A. I., Medgiz, 1956

Local Reaction of Protoplasm and Gradual Excitation, Nasonov, D. N., Acad. of Sciences of the USSR, Leningrad, 1959

Pathophysiological Series - Works of the Institute of Higher Nervous Activity, Acad. of Sciences of the USSR, Moscow, 1958, v. 4-5; 1959, v. 6

Physiological Series - Works of the Institute of Higher Nervous Activity, Acad. of Sciences of the USSR, Moscow, 1960, v. 4-5

Physiology and Biochemistry of Aging, Ministry of Higher and Secondary Vocational Education of the USSR, Khar'kov, 1960, v. 29

Planning and Allocation of Medical Personnel in Public Health Services, Rozenfel'd, I. I., Moscow, 1961

Problems of Radiobiology, Leningrad, 1956, v. 1; 1957, v. 2; 1960, v. 3

Five hundred copies of each of these publications were deposited in American medical libraries with additional copies available by purchase through the Office of Technical Services, Department of Commerce.

In Poland the Library placed the greater part of its resources into the preparation and publication of English-language editions of the following journals, issued by the State Office of Medical Publication:

Acta Biochimica Polonica
Acta Physiologica Polonica
Endokrynologica Polska
Polish Medical Journal
Archivum Immunologiae et Therapiae Experimentalis
Medycyna Doswiadctnalna i Mikrobiologia
Acta Poloniae Pharmaceutica
Folia Morphologica
Przegląd Epidemiologiczny
Polski Przegląd Radiologii i Medycyny Nuklearnej

By the close of the year, issues of three titles had been received and distributed to American medical libraries.

In Yugoslavia the Library supported the preparation of English-language editions of the following three journals:

Acta Medica Jugoslavia
Journal for Biological Research
Medical Journal

In further development of the PL 480 program, Mr. Daniel Bailey visited Israel and India in February. Discussions in Israel included cooperation in the abstracting/indexing of the world dental literature, and the preparation of a European Directory of Biomedical Scientists. In India Mr. Bailey laid the groundwork for further discussions relating to monographic critical reviews of scientific progress and science translation.

Publication Support. The first meeting of the Advisory Committee on Scientific Publications constituted an orientation session; at the second meeting the Committee reviewed favorably two applications for contract support of bibliographies: Bibliography of Sarcoidosis and Bibliography on the Golden Hamster. At the end of the fiscal year, NLM undertook preliminary negotiations for contracts to be established in FY 1964.

The Program Director for Scientific Publications was involved throughout the course of the year in the policy and procedural problems relating to the support of scientific publications under grants. These problem areas included: the extent to which the Public Health Service should pay the page costs of scientific publication; the application of Chapter 44 of the Regulations of the Joint Committee on Printing, requiring waivers for grant-supported publication; and questions of legal authority for the Public Health Service to support publications through the grant mechanism. In the absence of clearcut legislative authority, these problems are continuing.

CHAPTER III

TECHNICAL SERVICES

The 1963 figures for production in the Technical Services Division show, for prospects searched and processed, a moderate recovery from last year's low record; for materials received, almost a full return to the figures accepted as normal in recent years; but for items cataloged, a further decline. The statistics roughly reflect the personnel situation which for the prospecting and acquisition functions has been restored to what may be termed an inadequate normality, but for the cataloging function (as detailed later in this chapter) has been brought, by new losses, mostly of professional people, to a state of severe deficiency.

Much time and energy were expended during the year in instituting two important innovations: one, the new subject heading system (MeSH, 2d edition), requiring conversion of extensive records and the setting up of new routines in the cataloging activity; the other, Journal Title Code reporting, which is required in serial recording to allow for the processing of these publications by MEDLARS. Several members of the Division's staff were also heavily involved in the development of the MEDLARS coding system to include books and new serial titles.

Late in the fall a major move, compressive in effect, of the Division's personnel and equipment was required to yield space for the staff of the Bibliographic Services Division, giving the latter proximity to the computer. This move involved the taking down and reconstruction of the Division's offices.

SCOPE AND COVERAGE

A number of considerations indicate that a considerable expansion of the Library's collecting scope is in order. From even a casual view of the published product it is evident that the medical research worker must freely and constantly draw on knowledge from outside the medical or biomedical field. There is the need of cross fertilization of ideas in the field of theory, the use of other than medical techniques in setting up experimental conditions, or participation by the medical investigator in joint research projects that extend beyond medicine. These are not new requirements, but the burgeoning of research activity, its acceptance as a national responsibility, the new location of the Library--these combine to force them on the Library's attention and increase their urgency. The National Library of Medicine must have a comprehensive biomedical collection, wisely and generously reinforced in the literature of the basic and supporting sciences.

In expectation of getting under way with an expansion program during the coming year, several hundred titles of journals not now in the collection have been assembled. These will be arranged in an order of apparent priority on the basis of title alone; then sample issues will be acquired in small groups for consideration by the officers

of the Library. A conservative starting point will be found in general chemistry, in which subject the Library's present representation might well be doubled. Among other subjects deserving of better representation under this program are general science, biology, zoology, botany, psychology, sociology, instrumentation, food technology, and veterinary medicine.

SELECTION AND SEARCHING

Selection in Retrospect. A retrospective look at the changing strategy that has been brought to the job of locating and selecting the world's medical literature over the years has its interest. At the close of World War II the Library adopted the "blanket order" method of procurement, selecting in every country a dealer who was instructed to deliver, on publication, a copy of every book in the field of medicine as defined and a sample copy of each new serial. The advantages seemed obvious; prompt delivery, reduction of duplication, saving of much of the cost of selecting. In 1950 sample searches of citations in three national bibliographies brought to light the outweighing disadvantage of grossly inadequate coverage. Beginning then the agreements were progressively canceled and a staff of selectors gradually developed. The function was at first limited to selecting from assigned bibliographies, or from gifts as assigned, and was combined with the work of searching. Early in 1957 the area specialist concept was developed. Jobs were set up and each incumbent was given the assignment of attending to the whole published output of specified countries or subject areas. The main advantages are the full utilization of language skills and of the memory that comes from familiarity with a closely related group of data, together with the cultivation of responsibility and interest. Because of changing personnel and the consequent loss and gain of language skills in various combinations, the area pattern changes perennially, but the principle remains the same.

New Bibliographical Sources. During the year the fourteen titles noted below were added to the list of serial publications from which selections are made. These bring the number of the recurrent sources used to 218.

Frankfurt am Main. Deutsche Bibliothek. Deutsche Bibliographie.
Das Deutsche Buch.
Hungarian medical bibliography. Bibliographia medica Hungarica.
Budapest.
Indice bibliográfico guatemalteco. Guatemala.
Library journal. New York.
Mexico. Biblioteca Nacional. Boletín.
New American periodicals. New York.
Praha. Státní lékařská knihovna. The Annual of Czechoslovak
medical literature. Praha.
Scientific and technical aerospace reports (formerly Technical
publications announcements). Washington.
Spain. Hemeroteca Nacional. Revista. Madrid.

Sweden. Riksdagen. Bibliotek. Årsbibliografi över Sveriges offentliga publikationer utgiven av Riksdagsbiblioteket. Uppsala.

United Nations. Educational, Scientific, and Cultural Organization. Bibliography. documentation, terminology. Paris.

U.S. Communicable Disease Center. Staff publications. Atlanta.

U.S. National Institutes of Health. Library. Translation Section. Recent translations. Bethesda.

Viet-Nam. Directorate of Archives and National Libraries.

Central Copyright Registry. Sach Moi. Nouvelles Acquisitions.

New acquisitions. Saigon.

Searching Projects. Among special searching jobs undertaken during the year those involving Japanese publications offer probably the most interest in their yield of new data. A study based on various sources, but mainly on titles listed in the abstracting journal Igaku Chuo Zasshi, showed that non-governmental serial titles from Japan in the Library's area of interest on record since 1850 number 3,340. Of these, 2,246 had ceased publication, leaving 1,094 currently active titles, 116 of them in English, German, or French, 978 in Japanese. The Library was found to lack 532, 40 of them in English and 492 in Japanese. By the end of the year only a part of these had materialized as receipts; of the whole list many of course may turn out to be of slight value, and a few even inadmissible.

That the Library's representation of Japanese journals of substance runs well over 90 percent is indicated by a search of the 500 titles within scope listed in the Directory of Japanese Scientific Periodicals. Only 32 of these were found to be lacking.

During 1958 relations with the Japanese dealer reached a low point of stagnation. Hence (in October 1962) all items within scope in the 1958 issue of the Japanese National Diet Library's book catalog (Zen Nippon shuppanbutsu somokuroku) were selected and searched. Of the 436 items selected, the Library possessed only 48, leaving 388 to be ordered. During the years since 1958 the acquisition ratio is believed to be fairly high; the dealer has supplied an annual average of 375 books during the four fiscal years 1960-1963.

In another area, the 1962 Guide to Latin American scientific and technical periodicals issued by the Pan American Union provided a basis for testing holdings. A search of the 541 titles listed in the "Medical science and public health" section resulted in a yield for ordering of 20 serial titles. For Colombia the exploitation of an exchange manual listing serials revealed much poorer holdings; of 47 medical titles, 19 were not in the records.

At the close of the year Venezuelan medical and related periodicals, libraries and societies, by Alicia Quintero de Fernandez, was available as a prospect source. Of 75 titles clearly in scope, only 40 were found on record in the Library. Fortunately the compiler, who is Librarian of the Ministerio de Sanidad y Asistencia Social

in Caracas, has been extraordinarily cooperative; with her help these missing journals should prove obtainable. Special thanks are owing to Sra. Quintero, not only for sending the publications of the Ministerio and occasional needed issues of serials but also for arranging to obtain for the Library the current publications of Venezuelan doctors.

PROCUREMENT

Cost of Medical Publications. In 1963 the average subscription to an American medical journal cost \$12.22. The National Library of Medicine again this year submitted the figure for medical publications to the ALA committee responsible for the annual cost-study of periodical prices. Using the 1947-1949 base-years, the index reveals a 76 percent increase. Using the 1957-1959 base-years, now recognized for some commodities, the 1963 percentage increase stands at a surprising 23.4 percent. Book prices are now compiled by a commercial publisher as a by-product of a recently installed mechanized system for printing an American bibliography of new books. Because of earlier procedures used, only the 1947-1949 base can be applied to book prices. In calendar year 1962 the average price rose to \$9.87, an index of 155.2.

Fund Use. Of the budgeted \$85,000, over \$75,000 was liquidated by early June. Liquidations from closed fiscal year accounts bring the expenditures during the twelve months to over \$100,000; invoice backlogs have been virtually eliminated. Of the small outstanding balance for fiscal year 1963 money, more than \$6,000 is represented by material already delivered or invoiced pending delivery.

Periodicals Contract Default. Receipt of a large group of American journals has been held up and a serious subscription renewal burden imposed on the Library by an irresponsible subscription firm whose government-wide contract was declared in default on June 28 after months of failure to supply.

This disaster forces the Library to add the hazard of dealer delinquency to its other objections to the subscription renewal system required by federal regulations. Exemptions similar to those in use at the Library of Congress and most universities, permitting the establishment of "until forbid" orders with dealers selected on the basis of proven reliability, would be a long step forward. Under this arrangement the subscription dealer contracts with the numerous publishing houses, great and small, prominent and obscure, for supply of their titles on a continuing basis. The Library is adequately protected by the privilege of terminating any serial title and (for verification of reasonable charges) by the existence of generally available price lists and prices given within the journals themselves.

PL-480 Book Acquisition. Procedures for the book acquisition program under Public Law 480, administered by the Library of Congress, make it impractical for NLM to participate as a full partner. Generous offers from libraries actively involved in the program now promise to overcome some of the problems of acquisitions from these difficult procurement areas.

The Cornell University Libraries will send to NLM all medical material from India excepting historical medicine. The first shipment, consisting of three titles, arrived complete with catalog cards in April. Organizing the material in the receiving institutions and matching the catalog cards appear as major problems in the early stages. The New York Public Library agreed to provide NLM with medical titles supplied through the Cairo office and from Pakistan. The bibliographical apparatus being developed in each of these countries and the cultivation of local booksellers are encouraging steps toward permanent improvement in the acquisition efforts.

Exchange Problems. Reorganization of the exchange files on a geographic basis was started during the year. This should help in the task of re-evaluating existing and proposed exchange contracts. The dramatic increase in the value and cost of Index Medicus, a trend which probably will continue for some time, demands a policy review on the uses of the publication in the barter system.

Notable Receipts. In July 1962 Rumanian theses in the number of some 3,700 were received from Biblioteca, Facultatii de Medicina, Institutul de Medicina si Farmacie in Bucharest in response to the Library's acceptance in April of the librarian's offer. The theses date from 1875 to 1944 and average more than 60 pages in length.

Mrs. Irene Strieby of Indianapolis presented to the Library 70 medical biographical directories selected from among those which served as the basis for her 1940 Checklist and from those acquired later. Some 40 countries are represented. Of special note are a retrospective list and its supplements from Brazil covering the period 1885 to 1948 and a 650-page Hungarian directory published in 1938.

From a list of 189 works in Arabic medicine and culture offered by a dealer, the Chief of the History of Medicine Division selected 101 items as of special interest. These were received in October. All but 17 are Arabic.

NIH Library Surplus Material. In April the Library of the National Institutes of Health began a wholesale withdrawal of surplus publications from which, by previous agreement, everything in certain large categories will be transferred to NLM. Here it will be screened for a small but valuable minority of items, mostly serial, needed to fill gaps in the NLM collection. The transfer was well under way by the end of June.

The Far East. The closed-door status of Mainland China continued throughout the year. A few issues of seven journals were received through indirect channels and a few books by way of Hong Kong, although almost 300 medical serial titles are said to exist and the book catalog Chuan Kuo Hsin Shu Mu published in Peking lists some 700 titles falling within our scope.

From South Korea issues of 47 journals continued to come in. No books were acquired, but the language skill is now available to work two book lists of current or recent date and some success may be expected during the coming year.

From India, with its fine trade bibliography, which is worked for hundreds of book citations annually, book acquisitions have been negligible. The problem seems to be basically one of an inadequate and unreliable postal service, which in turn frustrates and discourages the dealer.

SERIALS CONTROLS

Journal Title Code (JTC) Reporting. Coded controls for the machine handling of indexed journals in the MEDLARS operation were instituted in April. These controls consist of symbols inscribed on the journal issues at the time they are processed at the main Serial Record.

This superimposed a distinctly different operation, with its own set of details, over the existing intricate checking job and had the immediate effect of significantly slowing down the checking operation. The JTC, as a permanent addition to the limited space of the 3 x 5 Kardex card, was inscribed in red as a precautionary measure. In addition, a master card file of JTC numbers was established with a photographed copy used as a working card. This copy bears essential information extracted from the Kardex and is used to identify special categories, such as titles already selected for addition in the future.

In the early weeks of this new procedure the decisions concerning the Kardex recording and reporting code data occupied considerable time daily. Where an individual title represents an exception, notes or brief instructions appear on both the Kardex card and the Master File card. This activity is looked upon as preliminary preparation for one of the essential secondary objectives--computer control of a substantial part of the Kardex activity.

Kardex Retirement. The Kardex retirement project, which is scheduled quadrennially, was completed in December. The entire Kardex was reviewed for the purposes of retiring the 1955-58 cards to the less frequently consulted Holdings File and of photographing to produce a new set of checking cards for the 1963-66 period. New cards were made for 12,956 serial titles remaining in the Kardex; these are the current serial titles under the present definition: "at least one issue received in the period 1959 to date." Some 2,442 entries were removed from the file; of these, 120 represent title changes and the remaining 2,322 are known or presumed to have ceased before the close of 1958.

During the last four years the application of paper tape or a punched card master file to this job was under consideration, but the advent of MEDLARS held such plans in abeyance. A new system of some

kind will be required within the next four years. Further photographic reproduction from the present photocopy to produce another set of checking-in cards cannot be considered; the transcription difficulties are insurmountable. Thus it will be impossible to adapt the present record cards to any future use and complete transfer of the essential and permanent information will be necessary no later than 1966, whether by electronics or by manual typing. The magnitude of the job is indicated by the statistics cited above.

CATALOGING

Personnel Changes. During the first year in the new building personnel losses reduced the cataloging staff from nineteen professional and nine subprofessional people in July 1962 to fifteen professionals, one professional trainee, and six subprofessionals on June 30, 1963. Of the four professionals lost, one was the Head of the Catalog Section. Another major loss was the Head of the Catalog Maintenance Unit.

Miss Emilie Wiggins, Head of the Romance Languages Unit, became the Head of the Section. Her position as a unit head was not filled. Instead, a reorganization of the units necessitated by the losses in personnel destroyed the languages structure, and instead of the Romance, Germanic, Slavic, and Special Languages Units, there developed four numbered units with two original unit heads remaining to supervise Units 1 and 2. The Head of the Section, with assistance from one of the catalogers, took over the supervision of Unit 3. This is primarily a Slavic Unit, although a member of the Bibliographic Services Division staff was assigned to catalog Hungarian books on one day each week. The original Head of the Slavic Unit had resigned in April 1962. Unit 4 is the Serials Recataloging Unit.

State of the Recataloging Program. The program to catalog the Library's collections according to modern methods got under way in 1946. During the 17-year period a third of a million titles have been done, and of this number 135,000, or 40 percent, were recataloged, being publications in the possession of the Library at the beginning of the program. The currently acquired crop in its entirety has always received first attention. The unpredictable size and nature of this current flow, the unforeseen problems posed by the material in the older collection, as well as unexpected interruptions and personnel losses, have always combined to make the scheduling of the recataloging program a matter of risky estimates. Merely naming some of the categories for which recataloging is now completed indicates the unusual nature of the material. In 1961, for example, there were the Japanese serials; in 1962, the old hospital reports, the Japanese monographs, and the Russian serials were completed. Unfortunately, the time cost of what remains to be done is also difficult to estimate.

With a few minor exceptions, all the separately bound books and pamphlets of the nineteenth and twentieth centuries have now been recataloged. Two large categories of monographs from the old collection remain: unbound and collectively-bound pamphlets, and the theses.

The pamphlets consist of the contents of some 5,700 bound multi-item volumes, and unbound items in some 800 cardboard containers. The older theses, numbering about a quarter million, are in both bound and unbound condition. Most of the older pamphlets and theses are listed in the Index-Catalogue and in the old public catalog, where locations are shown. The fact that the located material can be readily retrieved puts in question the need for recataloging. The unbound pamphlets need going over for the purpose of eliminating reprints, which are numerous, and making better provisions for preservation. Recataloging, whether full or partial, will be necessary for special items of value. The project for sorting is scheduled for 1964.

Serials must be considered in three main categories: (1) the periodicals, (2) government statistical reports, known as the "document collection," and (3) hospital reports. The last category was completed last year. The number of items in the first group remaining to be done may be estimated at a little under 10,000. A special serials recataloging unit, described below, has been steadily at work on the residue since January 1963, with an October 1964 target date.

The document collection, the second category, has been partially recataloged. When the backlog of current material has been reduced, a concentrated effort will be brought to bear on the documents; their recataloging is also scheduled for completion in 1964.

Cataloging of Current Receipts. Currently received material is cataloged on receipt except for foreign theses and books in languages which the cataloging staff is not able to do. Prominent among these languages are Arabic, Finnish, Turkish, and the languages of India and Southeast Asia. By far the greater part of the special language backlog, however, consists of Chinese books, and there is now a cataloger for the 2,500 titles that fall in the modern period. An interim approach to the Chinese collection is provided by a control card file for 1,100 recent works and a listing on sheets in Chinese characters of 465 multi-volume works of date mostly before 1800.

Foreign theses received since the beginning of the cataloging program have been cataloged in great numbers, but several thousand others have been backlogged. Present plans do not envisage regular cataloging for more than a minority of these, but it is expected that methods can be developed, probably by the use of title-page photography, whereby a satisfactory approach can be set up.

Serials Recataloging Project. A temporary unit was set up in January for the purpose of completing the recataloging of all the remaining uncataloged serials by the end of 1964, in anticipation of the discontinuance of the NLM Catalog in its present form. After that time, according to present plans, all current cataloging will be recorded in Index Medicus and there will be no provision for recording in book form the cataloging of earlier works. Hence it is essential that this important work be accomplished prior to 1965.

The serials unit, consisting of a supervisor, two other catalogers, and one library assistant, works in the stacks, where each cataloger has a desk close to the material on the shelves. Preliminary searching is greatly reduced by the use of the Biomedical Serials working files. Other shortcuts, such as abbreviation of accession records and elimination of analytics for those serials indexed in Index-Catalogue or Index Medicus, have been adopted, and still others are contemplated.

MeSH, 2d Edition. Medical Subject Headings, 2d edition, has a great impact on the work of the Catalog Section. Almost all work on new material was suspended from September 21 to November 7, 1962. The closing date of September 21 for the NLM Catalog was the last day for use of the first edition of MeSH and the second edition was not ready for use until November 7. Even then not all categories were completed and the format was difficult to use. During this interim period the choice was to catalog the new material once and then handle the same material a second time in order to give it subject headings, or to concentrate on recataloging. The latter solution was chosen. This loss of time, together with loss of catalogers mentioned earlier, has unfortunately caused the building up of a backlog of new material.

As soon as the new MeSH was ready, one cataloger was selected to give full time to preparing instructions for converting all subject headings assigned from December 1959 to September 1962 to agree with MeSH, 2d edition. The Catalog Maintenance Unit spent a large portion of its regular working hours in addition to 592 hours of overtime in making the corrections and typing the new guide cards needed. Some changes were made in the guide cards and none was filed for unused headings as had been done in the past. All guide cards for unused headings that had been filed in 1960 were withdrawn. The entire project was completed in May.

NLM Classification, 3d Edition. The Head of the Section is revising the NLM Classification. Two catalogers are also spending about half time on this project. It is planned to add a few classes in areas where there is much recent activity, such as in psychopharmacology, radioactivity, and space medicine. It seems desirable also to expand the index, and to add explanations and references to other related numbers within the schedules themselves.

Those revising the classification are aware of the dangers involved; it is hoped that the new revision will improve the classification without necessitating reclassification of too many titles already cataloged.

Adaptation to MEDLARS. The design of the Medical Literature Analysis and Retrieval System must enable it to handle book materials as well as journal articles. Its development requires the close cooperation of Technical Services Division personnel with both Bibliographic Services Division staff members and with General Electric personnel. During the year preliminary planning with BSD has been concerned chiefly with filing problems and rules of entry, and meetings with GE employees have been held to study, plan for, and experiment with unique cataloging

problems. Data sheets have now been constructed, and early in the next fiscal year it is planned to have one or two catalogers work with the contractor personnel in an effort to clear up some of the remaining problems before the catalogers begin preparing material to go into MEDLARS in January.

THE PUBLISHED CATALOG

1962 NLM Catalog. The 1962 NLM Catalog was issued in May 1963. Similar to the 1961 Catalog in format, including the covering of the tracings in the subject section, it will be the last volume to use the subject headings from the first edition of MeSH. At the end of FY 1963 there were 334 subscribers to the 1962 Catalog, contrasted with 305 subscribers to the 1961 Catalog, a year ago.

1963 NLM Catalog. The 1963 Catalog, in preparation, will be the first volume to incorporate MeSH, 2d edition, headings in the subject section. It will be the first volume since the 1950-1954 cumulation which does not include items cataloged by the History of Medicine Division. It will be the last annual volume of the Catalog. At the end of FY 1963 there were some 9,600 main entries, some 2,400 added entries, and some 2,500 cross-references already prepared for the 1963 Catalog. Subject cards for the main entries had also been made. Although no figures are now available for the subject entries, it is expected that the use of MeSH, 2d edition, will result in a somewhat higher ratio of subjects to main entries than that of previous years.

Quinquennial Catalog, 1960-64. Much work has been accomplished on the subject portion of the last quinquennial. As of mid-summer 1963 the 1960-61 subject files of cards have been consolidated and arrival from the Library of Congress of the stripped-down cards from the 1962 Catalog is awaited. Changes required by the conversion from MeSH I to MeSH II for the quinquennial, an enormous undertaking, have already been completed about half-way through the consolidated 1960-61 subject file; the remaining half of that file and the 1962 file remain to be converted. It is expected that cards produced in the 1963 and 1964 series will present few problems, if any, in this respect. Thus far about 8,500 cards from the 1960-61 consolidated subject file have been pulled, changed, and refiled under new headings; about 300 have been pulled and canceled; about 400 additional cards have been made for headings added.

The 1964 issues of Index Medicus will include citations of current American monographs integrated with the journal article citations. This will allow for experimentation in method preparatory to the inclusion and integration of all book citations in Index Medicus beginning January 1965. Thus during 1964 current American monographs will appear in the 1960-64 quinquennial Catalog, in the card series for 1964, and in the issues of Index Medicus. This quinquennial set will be the last issuance of the Catalog as a separate publication in the traditional form.

CHAPTER IV

B I B L I O G R A P H I C S E R V I C E S

The end of a singularly feverish year merely signals the beginning of an even more difficult time ahead. Fiscal Year 1963 was complicated by the fantastic amount of effort and detail that make up the design of a system as complex as MEDLARS; the situation was further complicated by a major change in the indexing system and the introduction of a dual system of inputting material for manipulation by the present Listomatic Camera as well as by the Honeywell-800 Computer. Generally, the programming, recruiting, training, procurement and installation of equipment (with one resounding exception) that constitutes the Detailed Design Phase of MEDLARS proceeded well. The inauguration and operation of the dual Transition System, however, encountered serious problems that led, despite all efforts at assuagement, to the development of grave backlogs throughout the pipelines.

The outlook for the coming fiscal year is for an even more difficult time since FY 1964 is the year of MEDLARS implementation. By the end of FY 1964 we expect to see MEDLARS transformed into a history-making, operating reality; however, what happens in the meantime will depend on a variety of factors.

MEDLARS

Phase III Contract. Negotiation of a Phase III contract with the General Electric Company for system implementation was initiated in August 1962, and it was not until February 1963 that the contract was finally signed. The contract is an extension of the Phase II contract, and is scheduled to terminate on January 31, 1964.

Systems Design and Programming. The Detailed Design Phase of MEDLARS (Phase II), which began in February 1962, continued at a rapid pace throughout most of the fiscal year. Numerous meetings were held with the MEDLARS contractor, General Electric Company, to finalize all details of the system specifications, and several refinements to the specifications were made.

The major design effort during the year, however, has been the writing and checkout of MEDLARS computer programs. Seven program modules (large groups of machine instructions each of which perform a basic function of the system) were assigned to a programming staff of about fifteen people from GE and four from the National Library of Medicine. The functions of these seven modules are the following: input data processing; retrieval of demand bibliographies; printing of demand bibliographies; printing of Index Medicus and other publications and recurring bibliographies; maintenance of the Medical Subject Headings list; and preparation of statistical reports on system use.

The number of hours of computer time used in debugging programs on the Army Map Service computer prior to installation of the NLM machine in March 1963 was 165. The programming effort was greatly accelerated by availability of the H-800 at NLM, and over 600 hours of debugging were logged on this machine during the last three months of the year. The programming work in the coming year will shift from checkout of individual programs to system testing of all programs under simulated operating conditions.

In April 1963 the NLM Programmer's Reference Manual was issued to the staff in order to (1) establish necessary standards of programming and documentation, and (2) supplement Honeywell manuals with programming tips and specialized routines developed at the National Library of Medicine.

Input Typewriters. A subcontract was let on July 31, 1962, to Friden, Incorporated, for three input transition typewriters, used in converting all 1963 journal material from the Library's current system to a punched-paper-tape format for entry into the computer. These machines are Friden Flexowriters with two paper-tape readers (one for reading strips of paper-tape from the current system and one for reading a tape which controls format of the data), a paper-tape punch, and a keyboard modified to include diacritical marks required for certain foreign language titles. The transition typewriters were delivered in December 1962, tested during January, and have been operating satisfactorily since then. Ten additional input typewriters for use in the MEDLARS operation are on order with delivery scheduled for August 1963.

Honeywell-800 Computer. A final decision on the computer configuration required for the Library was made in August 1962, and the following components were included: central processor with 8,000-word memory, seven medium-speed (64,000 characters per second) magnetic tape units, a high-speed (900 lines per minute) mechanical printer, a punched-paper-tape reader, a card reader, and a card punch.

Computer acceptance testing ran from March 27 to April 25, 1963, with an average performance of 97 percent for the 30-day test. Machine performance has remained above average, although some problems have been encountered in using the paper-tape reader.

Site Preparation. Preliminary meetings to plan site preparation work for the computer installation began in July 1962. The architect prepared his specifications and drawings during August, September, and October. Bids were received and the low bid was accepted in November; the actual construction work was performed during the period December 1962 to March 1963. Very few problems occurred during site preparation and computer installation, thanks to the detailed facility specifications prepared by GE, the excellent planning of the architect, splendid cooperation from Public Building Service-GSA, and fine workmanship by the facility contractor.

Output Equipment. In order to meet the high-speed, high-quality, and high-volume publication requirements of MEDLARS, equipment specifications were prepared for the design and manufacture of a special photo-printer called GRACE (Graphic Arts Composing Equipment). A sub-contract for GRACE was let to Photon, Incorporated of Wilmington, Massachusetts, on August 2, 1962. This machine will consist of three components: a magnetic tape unit from the Honeywell computer which reads the tapes to be printed, an electronic control unit and console, and an optical unit which photographs the output data on positive film or paper, character by character at the rate of 440 characters per second. Three fonts of type, a total of 226 characters, are used.

Although delivery for this developmental equipment was originally scheduled for May 1, 1963, this date was subsequently pushed back to late August 1963. Serious difficulties were encountered in the design of the flash tube assemblies, and there is still some doubt that the August delivery schedule will be met. The delays are due to several factors, some of them inherent in any developmental project and others caused by less than adequate management control of the manufacturing process.

In order to develop the film prepared by GRACE rapidly and efficiently, the Library decided to order an automatic film processor, the Eastman-Kodak Versamat. This machine consists of a series of rollers which slowly transport the film through several tanks, from developer to fixer to clear wash water. The film then feeds through a dryer and winds onto an output spool. The developed film is then ready for inspection, retouching, and cutting, after which it can be sent to a printer for preparation of photo-offset plates. The Versamat was delivered to the Library and installed during June 1963. Although preliminary equipment tests have been run, the film processor cannot be effectively checked out until GRACE is operational.

Transition Operations. The nightmare of parallel transition operations began in January 1963. All 1963 journal material is being processed twice, once for the current system for producing the Index Medicus, and again for entry into the computer and storage on the Compressed Citation File magnetic tapes. The Compressed Citation File is a densely packed, time-sequential store of bibliographic citations which will be later used for production of demand bibliographies. Because of this dual input requirement the Input Unit staff is 50 percent larger than normal, and several personnel problems have been encountered in setting up a transition night shift, in hiring of temporary personnel for the transition period only, etc. However, diligent work by the staff coupled with excellent supervisory control has kept the work flowing at a reasonable rate. As of June 30, 1963, the Compressed Citation Magnetic Tape File contained 13,958 citations from 1963 medical journals and an additional 5,000 citations were awaiting entry into the computer. Management problems connected with transition will grow in intensity until MEDLARS becomes fully operational in 1964.

Prognosis. All remaining equipment for MEDLARS will be installed next year. The ten additional tape typewriters will be checked out well in advance of full MEDLARS operation. Since the date of delivery of GRACE is still uncertain, it is probable that the January and perhaps the February issues of Index Medicus will be prepared by the present Listomatic system.

The transition system will continue to tax the capacity of the Input Unit with the result that backlogs will increase until MEDLARS is fully operational. The discontinuation of the current system will, however, so simplify input procedures that it should be possible to liquidate the backlogs within a reasonably short period.

The computer programming effort which picked up steam rapidly after the NLM computer was installed appears to be in good shape as of now. No serious difficulties are foreseen in the operation of the H-800 computer during the coming year. Based on studies of lease vs. purchase of the equipment, NLM plans to purchase the central processor and magnetic tape units, and continue to lease the other peripheral equipment.

INDEX MEDICUS

Indexing. The indexing level for FY 1963 was originally projected in the neighborhood of 145,000 to 150,000 articles; it was evident very early that the achievement of this goal would not be feasible. Under the difficult circumstances of the past year the best to be hoped for was to match the production level for FY 1962.

This inability to meet the projected goal was the result of a number of factors. A shortage of indexing personnel has plagued the Index Unit for some time. Although the staff of the Index Unit has been surprisingly constant and no indexers have left the staff in the past year, they have not been able to keep abreast of the mounting volume of material received for indexing. Another important factor has been the changeover, in October 1962, from the previous indexing method to a new system requiring more data from the indexers. The former indexing system required merely the basic information that appears in the printed Index Medicus: author's name, title of article, pagination, and subject headings under which the entry would appear. In the new approach, in addition to the basic Index Medicus information, the indexer now has to supply a greater number of headings for each article and also to indicate with each subject heading whether it is to be printed in the Index Medicus or merely entered into the MEDLARS computer for searching purposes only. Whereas previously each article had an average of about two subject headings, the new depth indexing method was expected to give an average of three Index Medicus subject headings and five to seven non-print or computer subject headings for each article. To date this quantitative level of indexing has been raised to an average of about five subject headings per article, and this is considered to be a satisfactory start.

The MEDLARS subject approach has a number of new features. Certain subject headings or tags were pre-printed on the indexing data sheet to call the attention of the indexer to them as concepts that should be looked for routinely in each article. Age groups of patients (infant, child, aged, etc.), type of article (historical, experimental, toxicological reports, etc.), and Public Health Service organizations that supported the research project responsible for the article are examples of this usage. Checking these concepts is time-consuming and has contributed substantially to lengthening the time required for indexing each article. "Provisional headings" also are suggested by the indexers to bring out concepts that cannot be handled adequately with existing subject headings; these headings, after being approved by a senior staff member, are entered into the MEDLARS computer as non-print headings. Although they will never appear in a published issue of the Index Medicus, the system provides for manipulation of these provisional headings and review of their use frequency at any time. The "deeper" indexing, which began at the same time in October 1962, requires the indexers to examine the articles in greater detail to bring out all important aspects of the article.

In the early months of Fiscal Year 1963 and up to the end of October, the Index Unit used the 1st Edition of Medical Subject Headings (1960) for the selection of headings to be used in the 1962 issues of the Index Medicus. With completion of the indexing work for the December 1962 issue of the Index Medicus, the staff worked on material for the January 1963 issue using the 2d Edition of Medical Subject Headings. This edition contains hundreds of new headings and cross-references and many more specific subject headings than the first edition. With the discontinuance of the use of subheadings in Index Medicus many new subject headings had to be provided. The 2d Edition also appeared in a new format; it has an alphabetical section similar to the 1st Edition and a new categorized section in which are listed all the headings which apply to a specific category or subcategory, such as parts of the body, musculoskeletal diseases, organic chemicals, and structural groups.

Initially the indexers found it difficult to adjust to the new authority list; after eight months they have become accustomed to using it and can work faster with it.

Indexing for the Index Medicus has changed in character over the past six months from an operation of moderate difficulty that required a good but not professional scientific background and a good foreign language background, to one of extreme complexity and exactness, requiring top scientific knowledge, a high order of intelligence, extremely good judgment and a near-fluent foreign language ability.

In the second half of the year the Index Unit added four new staff members. It is, however, four to six months before a new indexer reaches a level of proficiency that is of quantitative and qualitative benefit to the production needs of the Index Medicus. Also, during the new indexer's early months of duty a considerable amount of the time of a senior reviser is required to train and supervise him. This subtracts from the productive time of the reviser and further contributes to reducing indexing output. The Index Unit will continue to recruit new indexers because the present staff, even with four additions, is not adequate to handle the volume of literature received for indexing.

As a result of a variety of factors (personnel shortage; changeover to new, complicated, indexing sheets; use of the new edition of Medical Subject Headings; beginning of depth indexing; suggestion of provisional headings, and designation of subject heading as print headings or non-print headings; increased journal receipts; greater number of articles within each journal issue; etc.) the indexing backlog has mounted steadily throughout the year. As the fiscal year began the indexing backlog was a modest 3,096 articles, though higher than that recorded for several years previously; at the close of the fiscal year the backlog was 11,000 articles, an all-time high that is the equivalent of about a full month's indexing. The liquidation of the backlog should be accomplished before the end of the calendar year.

Revision. Revision of indexers' work continues as a part of the overall quality control program of the Index Unit. In addition, this past year an additional quality control check was instituted. In the past indexer-trainees had all of their work completely reviewed for accuracy and quality; other indexers had their work only spot checked as needed. These practices continue but in addition all of the translated titles are checked. This check is meant to assure that the translated titles are in good scientific English and that they accurately reflect the meaning of the original title. This has been a valuable quality control mechanism and the errors found and corrected have more than justified the extra time of high-level people required for this check.

Publication. In Fiscal Year 1963 there were 139, 462 items published in Index Medicus. This figure represents a decline of 2,449 articles from the 141,911 items published in Fiscal Year 1962. In calendar year 1962, however, 145,786 articles were published, representing approximately 5,800 more articles than were published in calendar year 1961. This disparity between fiscal and calendar years is clarified if the figures are cited on a semi-annual basis:

January-June 1961	66,152 items
July-December 1961	73,848 items
January-June 1962	68,513 items
July-December 1962	77,273 items
January-June 1963	62,189 items

The monthly issues of the Index Medicus varied in size from 6,529 items for February 1963, to 15,840 items for the December 1962 issue. Two other monthly issues contained fewer than 10,000 items; these were November 1962, with 9,875 items, and January 1963, with 7,035 items. The December 1962 issue owed its large size to the effort to publish all the remaining material that had been indexed using the 1st Edition of Medical Subject Headings, since the 2d Edition of Medical Subject Headings would be used thereafter, beginning with the January 1963 issue. The January and February issues were small because of the shifting of indexing time to training and orientation sessions.

Only 107 journal titles and 5 medical project reports were added to the List of Journals Indexed in Index Medicus in FY 1963. This is less than a third of the number added in FY 1962 and about equal to the number added in FY 1961. The immense indexing backlog precluded the addition of more journals, which would merely have aggravated the situation. In fact, the total list of journal titles earmarked for addition in 1963 had to be deferred to a more propitious point in time.

Cumulated Index Medicus. Production of Volume 3 of Cumulated Index Medicus went well with all filming completed and in the mail to the American Medical Association on December 21. Two shifts were used in preparing Volume 3, which contains 3,155 pages of Subject Section, 1,699 pages of Author Section, and 73 pages of List of Journals Indexed - an increase of 13 percent over the previous year. Publication date of the three-volume set was March.

BIBLIOGRAPHY OF MEDICAL REVIEWS

Volume 7. The seventh annual publication of the Bibliography of Medical Reviews appeared on August 21, 1962. About 4,800 review articles were cited in the subject-arranged listing. Although the physical appearance of the published volume was sub-standard, the Library accepted delivery, but forwarded an official complaint. Volume 8 appears to be an improvement over its predecessor.

Volume 8. The final articles for Volume 8 (1963) of the Bibliography of Medical Reviews were indexed in October 1962, concurrent with the completion of the December 1962 issue of the Index Medicus. There was a total of 6,633 articles in Volume 8, of which 5,419 articles were selected from regular Index Medicus journals and 1,214 articles were selected from journals not routinely indexed in Index Medicus but scanned exclusively for the purpose of locating review articles. Volume 8 was processed after completion of the Cumulated Index Medicus and was shipped to the Government Printing Office on April 29, 1963. The finished book was received in the Library on June 24, 1963.

Volume 9. Immediately upon completion of Volume 8 of the Bibliography of Medical Reviews work was begun on the collection of

articles for Volume 9, which will be a by-product of the 1963 issues of the Index Medicus. As of the end of the year 2,451 articles had been collected for Volume 9. Index Medicus journals contributed 2,263 articles and non-Index Medicus journals accounted for the remaining 188 articles.

MEDICAL SUBJECT HEADINGS

One of the major problems in transition to the MEDLARS system was concerned with revision of the subject heading list, Medical Subject Headings. The basic work was well along at the beginning of the fiscal year, but final acceptance of the headings occurred in late September and preparation of categorized lists of all terms for publication was not completed until mid-October. Almost immediately there began a period of intensive orientation for the professional staff from the Bibliographic Services Division and the Technical Services Division. In addition to more than a dozen formal sessions, the period of learning has continued throughout the ensuing months.

Early in 1963 final plans were set up for a four-level hierarchical structure for the terms in Medical Subject Headings. This would provide that any concrete generic term would have grouped under it the more specific terms, which in turn would have listed under them "third level" terms and under these would be "fourth level" headings. Each term is assigned a number that indicates its level and the "tree" to which it belongs. The system will facilitate generic searches by the computer. When the inquirer wishes to find all material on any invertebrate, for instance, it will be possible to include all the relevant terms in the system by simply asking for an "explosion" search on INVERTEBRATES. It must be understood that this treatment is selectively applied, and is in effect a convenient "shorthand" for specifying searches. Within some categories, there will be no tree structures whatsoever.

As soon as Medical Subject Headings, 2d Edition, was published, problems of making corrections arose. During the transition period, corrections have had to be made in two systems. This has involved not only the MeSH Dictionary File in MEDLARS and the Listomatic files being used throughout 1963, and individual citations in the two systems, but also various interim files as information has been transferred to the MEDLARS system gradually. Twenty different kinds of changes to Medical Subject Headings were identified and thirteen possible steps that might have to be taken in completing the record changes. Beginning with March, each issue of Index Medicus has carried from twelve to eighteen changes. Procedures can no doubt be simplified once the MEDLARS system is in full operation, but in the meantime we have been reluctant to make noncritical additions in midyear.

There are a number of problems to be resolved and projects to be executed in the critical area of subject headings:

1. Four-level tree structures must be completed for all sub-categories in which there are taxonomic relationships which would make them useful for the type of "explosion" search already described. Categorization of terms was presented for the first time in the second edition of Medical Subject Headings and provided our users with much more information on headings in the system than ever before. However, the manner in which they were presented was confusing to some readers, who found it difficult to see immediately the relationship among terms. Further experimentation is urgently needed to determine the best way to present these four-level structures to Searchers, Analysts, and the public.

2. Changes in Medical Subject Headings, 3d Edition, will be made on the basis of urgent needs. A number of New Heading Work Sheets have been prepared for consideration of year-end changes and the provisional heading system should have been in operation sufficiently long by September 1 for identification of new terms that are occurring often enough to merit main heading status. As soon as possible after MEDLARS becomes operational, the bulk of such changes should be made on a monthly, rather than annual, basis, although it will always be necessary to hold those that involve knotty problems of citation changes for initiation with a new volume. As more experience is gained in the use of provisional headings, guidelines must be established as to the type that will be most useful in the system. Procedures for incorporating them into the system must also be streamlined in the next few months.

3. Formal or informal comparison of Medical Subject Headings with other subject heading or terminology lists must be carried out. Such lists include the new Medical and Health Related Sciences Thesaurus of the Division of Research Grants, National Institutes of Health; American Medical Association's Current Medical Terminology and New Names; the revised Armed Services Technical Information Agency's Thesaurus; the College of American Pathologists' Systematized Nomenclature of Pathology. Liaison with at least some of the organizations working with such lists must be maintained. During the year the Deputy Chief has met with staff of the Defense Documentation Center (formerly ASTIA), the Committee and staff of Current Medical Terminology, and has received information from those at the American Medical Association working on New Names as to terms for drugs being considered for approval as "U.S. Adopted Names." However, time has not permitted more than exchange of information and general expression of the desire to cooperate.

4. It is desirable that all drugs now in Medical Subject Headings and those being added be "indexed" by their chemical constituents. This would accomplish a categorization of drug headings by type of chemical and make it possible to do searches on all piperazines, phenothiazines, etc., in the system. In this connection, principles for more detailed chemical indexing of drugs not in Medical Subject Headings need to be established.

SPECIAL ACTIVITIES

Occupational Health Abstracting Project. The abstracting of American articles in the field of occupational health done for the Bureau of State Services, Public Health Service, was extended into FY 1963. In this third year of operation, 406 abstracts from 105 journal issues were prepared.

Cyrillic Bibliographic Project. The number of articles processed in FY 1963 for the Library of Congress dropped to 17,292 articles from last year's 19,745 articles. The number of East European articles totaled 7,976 for FY 1963 as opposed to 8,621 for FY 1962; the Russian articles amounted to 9,316 for FY 1963 whereas in FY 1962 there were 11,124. The East European segment represented 12 percent of the total literature indexed in the Index Medicus, a slight drop from FY 1962 and FY 1961 when this segment represented 14 percent of the total. The explanation for this statistical variation can be found in the indexing backlogs that were noted earlier.

Russian Neurochemistry Project. In this fiscal year 113 articles were selected, photostated and shipped to Dr. Williamina A. Himwich in Galesburg, Illinois.

Dictionary File. A number of years ago the Bibliographic Services Division started a file of chemical, drug, and medical terms and technical and foreign expressions which were too new to be found in any current dictionaries or reference works. This file has been kept up to date and has proved invaluable in the indexing work of the Division. In the past fiscal year 390 new terms were added to this file and 76 cards were withdrawn to bring the net total of cards on file at the end of the year to 14,228.

Portraits. Cards for 782 portraits were sent to the Prints and Photographs Collection of the History of Medicine Division during the year.

"American Documentation" Project. Fiscal Year 1963 marks the sixth year of participation of the National Library of Medicine in this project. Sixty-three abstracts were prepared for publication in the "Literature Notes" section of American Documentation.

Drug Literature Report. Because of her experience with the pharmaceutical literature, the Deputy Chief was "loaned" to the Office of the Director for about six weeks at the beginning of 1963 to prepare a report for the Subcommittee on Reorganization and International Organizations of the Senate Committee on Government Operations. The subject of the report was "The Nature and Magnitude of the Drug Literature." With the assistance of staff from all parts of the Library and a number of

other organizations throughout the country, she brought together a comprehensive review covering definitions and analysis of the problem, the organized groups concerned with the drug literature, description of the kind and quantity of primary, secondary, and special publications, case studies of the publications on two recent drugs, and a general discussion of the use of the literature by the physician. In addition, there were eight appendices including association reports, bibliographies of books and periodicals, and statements from the American Medical Association, the Food and Drug Administration, and the National Library of Medicine. During the rest of the year, the Bibliographic Services Division staff proofread galley sheets and page proofs and, at year's end, was completing preparation of an index to the report which will be issued as a Committee Print.

Cerebrovascular Bibliography. The Library continued to cooperate with the Cerebrovascular Committee of the National Heart Institute and the National Institute of Neurological Diseases and Blindness in the publication of the ~~experimental~~ Cerebrovascular Bibliography. The Bibliography consists of the reproduction of citations from Index Medicus which fall under those subject headings selected by the Committee. While the publication appears to have been enthusiastically received, the Committee has been making a careful study of its actual use by the limited scientific audience to which it is distributed.

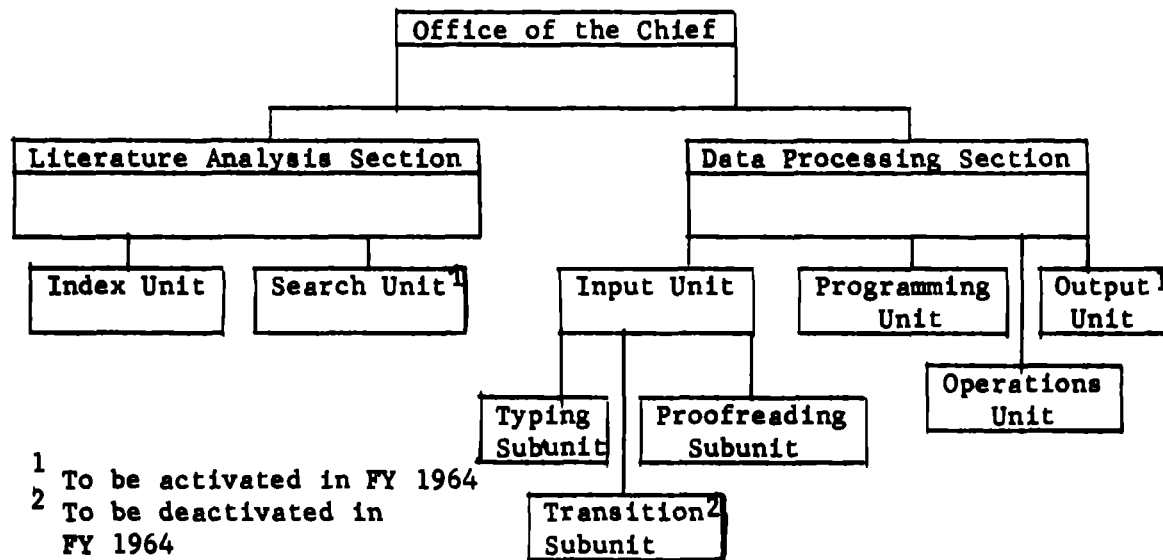
Revision of Filing Rules. With the addition of monographic entries to the Name Section of Index Medicus, it becomes apparent that more complicated filing rules will be required than were formerly used for personal author filing for journal articles. The American Library Association author filing rules were examined closely for appropriateness for use in a computerized system which adds 150,000 - 250,000 "name entries" per year. Activities of other groups in adaptation of the rules were checked. Contact was made with the National Aeronautics and Space Administration, Defense Documentation Center, Library of Congress, and the University of Illinois, Chicago Undergraduate Division, as well as with Miss Pauline A. Seely, Chairman of the Subcommittee on the ALA Rules for Catalog Cards. The only group doing work that could be used immediately by NLM was the Illinois group. After several working sessions, the Catalog and Editorial Sections of Technical Services Division and the Index Unit of Bibliographic Services Division agreed on rules for Index Medicus that followed, but somewhat simplified, the ALA author filing rules. They were undergoing final review and examination from the point of view of computer programming at the end of June.

Diabetes Literature Retrieval Project. Since September 1962 the Library has had a cooperative project with the American Diabetes Association in conjunction with its Diabetes Literature Retrieval Project. One hundred and twenty-one subject headings related to diabetes have been earmarked in the Indexer Assistant's code books and

as articles are encountered having one or more of these selected headings assigned to them, the article is flagged and subsequently photographed by the Project staff. This Project will probably terminate before MEDLARS begins operations.

ORGANIZATION

Effective August 1962, major internal organizational changes were instituted in the Division. Since that time the Division has consisted of three components: Office of the Chief, Literature Analysis Section, and Data Processing Section. The Literature Analysis Section is composed of two units: Index Unit and Search Unit. The former Subject Analysis Section is essentially the present Index Unit; the Search Unit will not be activated until next year. The Data Processing Section consists of the following four units: Input, Programming, Operations, and Output. Last August only the first two were activated and the Operations Unit came into being in January 1963; the Output Unit will be activated next year. The former Processing Section is now the Input Unit. The chart that follows illustrates the divisional organization as of June 30, 1963.



PERSONNEL

On December 13, 1962, Miss Winifred Sewell became Deputy Chief of the Division. Mr. Charles J. Austin came on duty on August 9 as Head of the Data Processing Section after working intermittently with the Library since April 1962. Mr. Constantine Gillespie is Head of the Index Unit. Mr. Daniel Belsole reported for duty as Head of the Operations Unit on April 1. Mrs. Audrey Milner assumed the duties of Head, Input Unit, on January 28. Mrs. Rita Avery was assigned to supervise the Typing Subunit of the Input Unit on September 30.

CHAPTER V

H I S T O R Y O F M E D I C I N E

Fiscal Year 1963 marks for the History of Medicine Division as for the rest of the National Library of Medicine the first full year of operation in the new building. For HMD it also marks the first full year since it rejoined the Library, back from its exile in Cleveland. Besides the obvious differences in attractiveness and adequacy of the physical plant, this has resulted in two major changes: an increase in the number of readers and in other public contacts, and closer working relationships with other divisions of the Library. Both have been highly beneficial to HMD; their effect may be seen in a number of the program areas of the Division.

HMD started out the year with a staff of only seven out of its authorized strength of twelve. Of these, three had previously been with the Division in Cleveland and three had been in Washington. Rebuilding to full strength has taken nearly the entire year.

ACQUISITIONS

The acquisitions program was hampered until June by a shortage of personnel. As a result the number of editions searched and added to the collection, although larger than the year of the move, lagged behind other recent years. The favorable experience of June, however, indicates that HMD should be able to equal or surpass its past record during the coming year. Even more important than numbers is the increased speed, care, and consideration with which searching and ordering may be done. In this HMD has benefited materially by the close cooperation with Technical Services Division which the reunification of the Library has made possible.

Among the outstanding acquisitions for the year were two additions to the Library's notable collection of incunabula: John Estwood, Summa astrologiae judicialis, Venice, Santritter, 1489 (Stillwell E84), and Regimen sanitatis Salernitanum, Venice, Bernardinus de Vitalibus, /1500/ (Stillwell R72). Among the 38 sixteenth century editions added to the Library was a copy of Caspar Bauhin's Phytopinax, 1596, with the signature of the author and several members of the Basel graduation class of 1605. In seventeenth century editions HMD acquired two English items not in Wing. Additions to the Americana collection were small in number, but four of them had escaped Mr. Austin's net and Early American Medical Imprints.

The special collections in HMD have received their greatest increase by transfer of material from the general collection. Early printed bound monographs went to Cleveland in 1942, and the boxed pamphlet collection was culled somewhat later. Together these totaled approximately 35,000 items. No concerted effort was made to pull all pre-1801 imprints from the Library's thesis collection nor its pamphlet volume collection. During the past year HMD has searched the latter and all volumes with early imprints have been transferred. The Reference Services Division has undertaken the larger task of pulling all pre-1801 theses, and this program is in progress. It is estimated that these transfers will add approximately 6,000 pamphlets and 17,000 theses to the historical collection. With the expected future addition of pre-1801 serials during the course of recataloging by Technical Services Division, the Library's count of eighteenth century and earlier imprints in the HMD will rise to an estimated 60,000 pieces. The extraordinary richness of this collection for historical and bibliographical research need hardly be emphasized.

CATALOGING

In common with the rest of the Library, the History of Medicine Division some ten or more years ago began a program of recataloging its collections. At that time there existed in Cleveland only an author "checklist" by centuries, which served as both catalog and shelflist, supplemented by the Index-Catalogue. This was to be replaced gradually by complete cataloging of all works in the collection. After considerable discussion, a manual for HMD cataloging was prepared which represented a compromise between the full bibliographical descriptions employed in such works as John Fulton's Bibliography of the Honourable Robert Boyle or Geoffrey Keynes's Bibliography of the Writings of Dr. William Harvey and the more simplified forms used for modern books. The cataloging was intended to reflect the highest standards of bibliographical scholarship and description compatible with a major cataloging effort.

As time went by, the ideal of bibliographic completeness and perfection came to play an increasingly dominant role in the cataloging program. Admirable as the ideal and intention was, it has proved impractical to maintain. The program was lagging to such an extent that it became imperative to undertake major changes. Much time was devoted during the first half of the year to deciding on necessary changes, rewriting the cataloging manual, and developing new working procedures. As a guiding principle it was determined that there should be no sacrifice in the high standards of scholarship already set but rather that simplification and increased speed would come from a reduction in the amount and type of information presented. The needs of the medical historian rather than the bibliographer will determine the future structure of the catalog.

Accordingly, all significant texts in the often complex books of early printing will continue to be brought out so that the scholar can find them without undue effort, but the bibliographical history of each work will be rigidly limited. It was decided to omit the signatures in descriptions of sixteenth century books; when the need for this information arises in a particular case, it may always be derived from the book. It was also decided not to print cards for the early books in the National Library of Medicine Catalog after 1962, but to press forward instead as rapidly as possible on the preparation of a separate catalog of the sixteenth century collection. It is expected that this will prove more useful to the specialized audience most interested, and particularly to those in general humanistic studies who are not accustomed to using or who cannot afford modern medical bibliographies. The last decision has also made possible a number of procedural simplifications conducive to more rapid and efficient cataloging and processing.

The successful initiation of these new policies and practices is due in no small measure to the addition of Mr. Richard J. Durling to the staff as Senior Cataloger. Besides his more general supervisory duties, Mr. Durling has himself taken on the job of completing the cataloging of the sixteenth century collection. While he has proceeded from Abano to Galenus (quartos and smaller) in the sixteenth century, Mr. Peter Krivatsy has been concentrating on seventeenth century imprints and Miss Marjorie Stuff on the few early American imprints not yet cataloged. At year's end these numbered only about 50 and it is expected that they will be completed early in the coming year. Although the first half of the year was in effect devoted to recruitment and the development of new policies and procedures, the number of editions cataloged, as reported in the annual statistics, is nearly double the average for the seven years preceding the move.

REFERENCE AND CIRCULATION

The move from Cleveland to Bethesda has brought a significant increase in the use of the collection. While interlibrary loan and photoduplication orders have remained approximately the same, the number who come in person has gone up. Not counting tours and other special groups, about 50 visitors a month on the average have asked for and received more or less extended information about the Division and its collections or browsed in the open reference shelves. There have been in addition 176 visits by registered readers engaged in research in the HMD collections and they have used a total of 641 books. (The statistical report is misleading, since the figures prior to the move included visitors as well as genuine readers; a much more rigid definition has been used in Bethesda.)

Most of the readers have come from the Washington area, but states from California to South Carolina have been represented. Most readers have come for one or a few visits, but a small number have pursued their researches for extended periods. It is worth noting that readers have come from the neighboring laboratories and clinical centers no less than from centers of historical scholarship.

PRESERVATION ACTIVITIES

For many years while it was at Cleveland, the History of Medicine Division was fortunate in having on its staff a master hand bookbinder, Mr. Jean Eschmann, who repaired, restored, or if necessary rebound nearly all the early books needing rehabilitation. Consequently the collection arrived in Washington, on the whole, in excellent physical condition. While a binding program must be re-established to care for unfinished work, new acquisitions, and minor repairs, a potentially larger problem was the thesis collection, including some 17,000 unbound pamphlet-size works. Because of their low level of use, it was decided to place each in an acid-free folder and envelope rather than to bind them either separately or in groups. It is estimated that this will cost less than 5 percent of the cost of having each one individually bound.

The return of HMD to the main Library has made it possible to resume the security filming program, with the close cooperation of the Photoduplication Section of Reference Services Division. This has been tied in closely with the interlibrary loan activity, so that noncirculating rare books may be placed on film for lending as promptly as possible. The one filming then serves both purposes, and insofar as possible books in the collection will be filmed only once.

PRINTS AND PHOTOGRAPHS

Transferred to the History of Medicine Division from Reference Services Division in April 1962, the former Art Section was renamed the Prints and Photographs Collection, in keeping with the nature of most of its material. For several years this activity has suffered from insufficient staffing, and it has unfortunately continued to suffer during the past year. The able and devoted efforts of Mrs. Genevieve Kennedy have enabled the Division to keep up with a heavy reference load, but backlogs of uncataloged material and uncompleted tasks have continued to increase.

Exhibits. Exhibits on the following subjects were prepared for display in the main lobby and the HMD reading room: history of dermatology and syphilology; early herbals; medical newspapers (prepared by Reference Services Division); centennial of the Armed Forces Institute of Pathology; saints in medicine; medical bibliography, 1500-1963 (prepared in cooperation with Bibliographic Services Division); early works on the eye; some outstanding works from the Library's collection (prepared for the Second International Congress on Medical Librarianship). In addition, a number of special displays were set up for visiting groups.

CHAPTER VI

REFERENCE SERVICES

The basic mission of the Reference Services Division is to make the information in the Library's collections readily available to all segments of the national and international biomedical community. In addition, similar services are provided to members of other groups in search of biomedical information.

The organization of the Division established in June 1962 was maintained, and has yielded more effective coordination of internal operations. Mrs. Mildred Crowe Langner served as Chief of the Division through December 1962; Dr. Joseph H. Roe, Jr., was appointed Chief in January 1963. The Division lost 9 staff members during the year but gained 19 new employees, some filling positions that had been vacated during the previous fiscal year. The Chief and all Section Heads were heavily involved throughout the year in meetings, conferences, and symposia; large amounts of staff time were consumed in preparation for the Second International Congress on Medical Librarianship.

REFERENCE SECTION

Reference Questions. The Section answered 13,418 questions, which is an increase of 31 percent over the number of questions answered in FY 1962. Although the volume of reference work was heavy in all disciplines of medicine and related science, it was especially so with respect to the drug literature. Here it ranged from references on tricresyl phosphate intoxication, sent to the State Department in connection with an outbreak of poisoning in India, to haematological effects of chloramphenicol for a U. S. Senator, and from thalidomide for all and sundry to the abuse of over-the-counter drugs for a mid-western university.

Readers Service Desk. Significant increases over FY 1962 were recorded: readers counted, 21,484 (FY 1962: 11,544) and readers' call slips serviced, 70,791 (FY 1962: 47,605). The tremendously increased reader request load on Saturday necessitated the assigning of an additional full-time employee to the Readers Service Desk; toward the end of the year the excess workload problem appeared to be extending to Sunday service.

Reference Collections. Centralization at the Readers Service Desk of information formerly displayed on end-panels was achieved with the installation of a visual file listing journals shelved in the Reading Room. Some subject and geographic breakdowns for other collections were also listed; information in the visual file will be expanded in the course of time. At the end of the year the current journal collection was weeded of several hundred titles and space was available to accommodate the five-year bound journal reference collection in the same area.

Work Completed and in Progress. Miss Miriam Hawkins and Miss Elizabeth Moseley completed another revision of Basic Reference Aids for Small Medical Libraries. Its need was quickly attested to when the initial supply of 500 copies was depleted within a few weeks. A reissue of 1,500 copies has been ordered.

The Section worked closely with the Surgeon General's Advisory Committee on Smoking and Health during the year. The Head of the Section, Charles A. Roos, was requested by the Committee to serve as bibliographic consultant and he assisted with a number of its problems. Dr. Dorothy Bocker searched the literature on a continuing basis and compiled a classed annotated bibliography on smoking and health numbering, thus far, some 1,000 references.

Registrants attending the Second International Congress on Medical Librarianship received copies of The Directory of Medical Libraries Outside the United States and Canada; Preliminary Edition, edited by Mrs. Edith D. Blair. Work on the definitive edition will begin in July.

Dr. Bocker completed a Bibliography on Wound Infection under contract between the Library and the Division of Health Mobilization of the Public Health Service.

Mrs. Marjory H. Wright compiled Reports in Medicine and Allied Sciences Known by Personal Names. She also revised Selected References on Medical Electronics.

An abstract of a paper on medicolegal periodicals by Dr. J. Nemeč was published in the abstracts of papers submitted to the Second International Congress on Medical Librarianship (Excerpta Medica, International Congress Ser. No. 56, Abst. No. 50).

Surveys. Two surveys of local library facilities were completed for the parent organizations: Mrs. Wright joined Miss M. Ruth MacDonald and Dr. Roe in a survey of the Reference Room of the Division of International Health, PHS; Miss Hawkins surveyed the Medical Library of the Columbia Hospital for Women.

LOAN AND STACK SECTION

Demand for loan of materials was heavier than anticipated. The attempt to keep the interlibrary loan operation in proper perspective is likely to become more difficult, particularly as the coverage of Index Medicus widens and the recurring bibliographical service of MEDLARS becomes operational. Few medical, technical, or general libraries acquire as many medical periodicals as are indexed now in Index Medicus, nor do they provide materials as generously as the National Library of Medicine does. Though much has been said about the urgency of service on scientific publications, it is obvious that many users prefer the relatively long wait (two weeks) for free service over a nominally-priced one- to two-day service from libraries in their own regions. Too often is NLM caught in the dilemma of claims of service versus counter claims of service deficiencies.

It becomes obvious that medical library resources must be expanded and decentralized if the burgeoning needs of worldwide medical investigation are to be adequately met in the years to come. Recognition that the NLM collections, consisting mainly of a single original copy, cannot meet the multiple needs of reader service, interlibrary loan, and resource development on a national and international basis is becoming painfully apparent.

Loan Processing. Two years ago the total processing time required for a photocopy loan from NLM was surveyed. At that time 5 to 65 days showed in the results, with average processing time being 7 to 10 working days from date of receipt until the photocopy was mailed. Now the average time is considered to be 2 days for the loan operations plus 2 to 4 days for photocopying; the majority of requests are being serviced in from 4 to 6 working days. With mailing time included, there should not be more than 12 to 14 calendar days between the time a request leaves a library and the article is received. Hopefully, FY 1964 will find even faster service. This will depend in part, however, upon the quality of citations received. While few loan requests submitted give all information needed by a lending library, most are comprehensible and can be processed without further research. Far too many require additional searching and verification, thus creating delay. In the future, many of the requests received with incorrect information or inadequate verification will have to be rejected upon receipt.

Theses Collection. Approximately 17,000 theses from five universities have been moved from the General Collection to HMD: Altorff, Erfurt, Hardenovici, Helmstad, and Wittemberg. The decision to transfer the theses was based on a survey which showed that almost all of the material from these universities is pre-1801 and therefore should be shelved in the HMD collection. Theses from six other universities are being reviewed and it is expected that about half of them will be transferred also.

Loan-Bindery Procedure. The procedure for reserving loan requests for material at the commercial bindery was altered slightly in December in an attempt to ascertain the desirability of continuing the service. The original notification is compared with the revised notice to illustrate the change:

Original Notice: We regret that we are unable to provide photoloan service immediately with respect to the publication cited on the enclosed interlibrary loan request form. It is at the Bindery. A record has been made of your request, however, and we hope to provide service within a four-week period.

Revised Notice: We regret that we are unable to provide immediate photoloan service for the requested publication as it is now at the Bindery. If you wish to receive this material as soon as it is available, please return this notice and the enclosed request form immediately.

Since December the altered procedure has saved unnecessary maintenance on 35 percent of requests received for material at the bindery, with borrowers either canceling or obtaining material elsewhere. During the year 5,046 notices were sent indicating non-availability because of bindery operations, and 3,809 requests were completed upon return of material from the bindery.

Serial Collections. The decision to divide the serial collection at the time of the move to the new building has proved effective. Approximately 5 requests are received for A level titles to every one received for the material on C level. The most-used serials, 1946 to date, are shelved on A level, which provides maximum accessibility for service of reader and loan requests. C level contains the pre-1946 serial collection. Since there are twice as many volumes on C level as on A, the concentration of requests for the A level (modern) material is effectively 10 times heavier than the requests for C level (older) material.

Personnel In-Service Training. A program for continuous training of staff in this Section began in the summer of 1962. Everyone participated, either as lecturer or listener, in the informal sessions. Specific information about indexes; lists of journal titles or abbreviations, various library catalogs and card records, "on site" explanations of NLM special collections, etc., were given and the application of each to routine work situations was demonstrated. These informal classes are held for one or two hours each week in two months. During the winter and spring ten members of the staff completed evening courses in library organization given by the U.S. Department of Agriculture Graduate School. It is planned that an equal number will participate next year.

Statistics. Requests for interlibrary loans totaled 158,348 during FY 1963, an increase of 22.5 percent over the previous year. Loans filled were 86 percent, as compared to an 88 percent completion rate last year. The two major reasons for the increase of unfilled requests were the changes in the loan-bindery procedure, and a 54 percent increase in requests rejected on grounds of eligibility (non-library origin), incompleteness, or local availability. The peak load of 15,237 loan requests was reached in March; the low month was September when only 10,033 requests were received. The peak month for reader requests occurred in April when 8,824 requests were received; the low month was September with 3,302 requests. Of all readers' requests, 94 percent was completed.

PRESERVATION SECTION

Two surveys conducted during the year have yielded current information on the magnitude of the preservation problem. The first attempted to determine the cost of filling gaps in the serial collection, and arrived at a figure of \$950,000 (\$400,000, if only important substantive titles were considered). The second sampled the condition of the collection; an estimated 40,000 volumes are in need of rebinding, 35,000 volumes are incomplete but bindable, and 32,000 are incomplete poor paper volumes.

These two surveys indicate that a substantial increase in personnel and funds is necessary to develop a high-priority, practical program to save the large quantity of unbound paper now on the shelves. A tentative approach to this problem has been the attempt to acquire in original form only important hard-core gaps, and to fill gaps in pre-1945 materials mainly by borrowing and filming. This program is being applied to all serials in the recataloging program; to date, inspection of 462 titles resulted in 26 requests for original replacements, 17 volumes filled by loans, 145 less important volumes bound, and 33 filmed incomplete.

Binding Unit. During the year 13,630 volumes were shipped to the commercial binder, an increase of 25 percent over FY 1962 and 6 percent over the average of the past 6 years. More significant, after extra binding funds became available, 1,400 books were shipped during each of the last 5 months, an average made possible by improvements in methods and the increased experience of the staff. Loss of the Section's only experienced binder reduced the number of volumes bound on the premises. The loss of one position, together with the added tasks of labeling recataloged serials, marking, binding, repairing HMD material, and setting up a collection of dummies also affected production. A significant gain was made when the commercial binder agreed that the contract stipulated the stamping of call numbers on the spines of springback bindings used for most serial volumes.

The most important new project undertaken was labeling of serials for the recataloging program. Labels were first produced on the Flexowriter and later by a small press purchased for the purpose. It was found that the adhesive which had worked acceptably with the typed labels was not suitable for the printed ones; several methods and adhesives were tried before a satisfactory adhesive was found. Labeling and clearing recataloged sets now takes most of the time of one staff member.

Commercial binding was generally satisfactory, though considerably more expensive than in the past. However, the new FY 1964 contract, held by the same binder, contains price reductions in all classes of work. Several important changes are in the new contract. The premium priced springback binding was abandoned, after lengthy investigations, on the grounds that it added no strength or flexibility to the volume. A variation of regular binding, in which paper too poor for sewing is held together by a polyvinyl adhesive, will be used. Specifications were written for a new binding, known commercially as perma-bound, a strong, extremely flexible variation of perfect binding suitable for books up to 12 by 1½ inches. Perma-bounds were priced in the new contract at less than a dollar and should be useful for monographs formerly placed in regular bindings as well as for much of the work which has been done more expensively in the Section.

Increased binding funds, the simplified preparation methods possible with perma-bounds, and the rise in production sustained during the latter half of the year all indicate that, if the present Binding Unit staff remains fairly stable, commercial binding production during the next year will reach at least 16,000 volumes and other functions of the Unit will be performed satisfactorily.

Microrecords Unit. The number of pages of poor paper filmed during the year was 820,000, an increase of 250,000 over FY 1962. Although this is short of the goal of 1,170,000 pages set in last year's report, it is significant that the increased efficiency and cooperation of the Photoduplication Section resulted in production of 578,000 pages during the last half of the year.

Recataloging has also affected the Microrecords Unit. To date 69 titles have been transferred from the TS (Temporary Series) file, which now contains 1,445 titles, to the cataloged series. Continuation of the recataloging program will eventually clear out all TS entries.

Several changes in practice have been introduced. Sixteen target boards and a number of photographically produced targets were acquired or fabricated to improve production. Film targeting now conforms to standards established by the ALA Guide to Microfilm Practices. Editing time has been cut by the decision to edit completely only substantive serials in major languages and to spot-check less important materials by inspecting approximately every tenth frame. Agreement of the Catalog Section to abandon individual reel numbers has simplified shelving, and further improvements in assigned shelving numbers are under study.

A major remaining problem of the microfilm collection is that for nearly all film there is only a single silver emulsion negative copy which serves both for security and use. A spot check made in November showed that about one fourth of these films is scratched. The policy of not maintaining separate security copies necessitates the limitation of film use to in-house reproduction and supervised use, and rules out interlibrary loan of single copy silver films. Even with such restrictions, each use slightly diminishes the quality of the image. It is estimated that reproduction of the collection on diazo or kalvar would cost about \$30,000, which would protect the much larger original investment in filming. A roll-to-roll printer is in the FY 1964 budget, and it is hoped that the present restrictions will be relaxed next year.

PHOTODUPLICATION SECTION

During FY 1963 orders completed for interlibrary loan increased by 17 percent although total pages filmed increased only a little more than 2 percent. The decrease in the pages per order ratio is partly due to conscious efforts to reduce retakes and duplicate exposures, and the elimination of unnecessary spacing frames. The page count used here is twice the total of the frame count recorded on individual cameras and includes wrapper preparation, order identification, etc.

Numerous other refinements in the interlibrary loan filming operation are beginning to show effect. A stationary camera equipped with a large capacity book holder was installed on C level to handle the relatively fat volumes of the pre-1946 era, thus reducing traffic from the stacks to the camera room. The frame-filling technique which produced four different reduction ratios was replaced with a fixed ratio of eleven to one with CopyFlo blow-back at $9\frac{1}{2}$ diameters. The major reason for this change was to resolve problems with the electronic cutter target; however, additional benefits accrued in that larger volumes formerly diverted to the Fotoflo and 914 Copier are now handled via the cheaper microfilm-CopyFlo process.

Mobile Cameras. Operational efficiency of the mobile cameras was increased significantly by installation of two large-capacity overhead power supply systems. In addition to eliminating several safety hazards, density control problems due to voltage fluctuations have been minimized. Another problem related to the angular reading exposure meter was partly resolved by changing the meter focus from the center of the book to the center of the left-hand page, thus reducing the amount of extraneous reflected light which adversely affected the density control.

CopyFlo. The microfilm exposure lamp normally used in the CopyFlo process has been replaced by a lower cost, longer life mercury vapor slit lamp. An average of eight lamps at \$45 each were consumed annually. The new lamp, costing \$12.50, requires the use of an auxiliary power supply unit which was fabricated and installed by the Data Processing Systems Division of the Census Bureau at a cost of \$200. The installation was completed on March 4 and the original lamp is still in use with no apparent sign of decreasing efficiency. Copy produced with the new lamp projection system appears to be superior, particularly near the edges of the paper.

The photographically produced mailing wrapper is on the way out. Not only is it expensive but, more seriously, it consumes about 10 percent of machine time and labor in the filming, CopyFlo, and cutting operations as well as a proportionate amount of supply costs. The most immediate problem relates to the CopyFlo time. Theoretically, the CopyFlo machine can produce about 4 million pages per year without the use of overtime hours. This year slightly more than 2.2 million pages were produced for interlibrary loan, thus using 57 percent of the available time. Other requirements, such as the photo clerk operation, preventive maintenance, repairs, set-up time and special projects, added another 27 percent of available time, leaving a current excess capacity of 20 percent or 800,000 pages. More rigid production controls plus elimination of the wrapper operation should add six months to one year to the present estimate of full capacity by the end of 1964.

Cost Study of Photoduplication Services. The annual cost study of photoduplication services showed a slight decline in unit cost for the high-volume free interlibrary loan service and a substantial cost increase for the customized special service operations of pictorial photography and photostating. Subsequently the fee schedule for special services was increased rather sharply. The low volume of special service requests indicates that there is no immediate prospect of cost reduction.

GRAPHIC IMAGE STORAGE AND RETRIEVAL

Despite past optimistic predictions, development of an economic and efficient graphic image system remains beyond the horizon. This year approximately 128,000 requests were filled by photoduplication from the total store of an estimated 7,000,000 articles. This is roughly one loan per year for every 55 articles in the collection. Chronological distribution of materials and FY 1963 photocopy loans in the following table are based on current theories of literature decay (50 percent decay for each preceding decade) and literature growth (doubling every 25 years).

<u>Period of publication (Fiscal Years)</u>	<u>Number articles received</u>	<u>Articles loaned via photocopy</u>	<u>Loan rate per 100</u>
1953 - 1963	1,700,000	64,000	3.8
1943 - 1953	1,350,000	32,000	2.4
1933 - 1943	950,000	16,000	1.7
1800 - 1933	<u>3,000,000</u>	<u>16,000</u>	<u>.5</u>
Total	7,000,000	128,000	1.8

A recently completed study of the 1959 loan rate per 100 articles for material published between 1950 and 1959 among 295 journals listed in Table 23 of the Survey of the Interlibrary Loan Operation of the National Library of Medicine by William H. Kurth revealed rather astonishing information. Lancet and JAMA dropped from first and fourth ranks (Kurth) to Nos. 145 and 262 with rates of 5.8 and 2.7 respectively. Medicine, ranked 51st in the Kurth list, moved up to the number one spot with a rate of 96 articles per 100. The next table summarizes grouped usage rates among these titles. The full table is printed at the end of this chapter.

<u>Loan rate per 100 articles published</u>	<u>Number of journals</u>
51 - 100	1
41 - 50	2
31 - 40	2
21 - 30	8
11 - 20	54
6 - 10	72
0 - 5	156

Conversion of the entire W1 substantive collection of approximately 160,000,000 pages is currently estimated at costing not less than \$1,676,000 for a single silver copy. Conversion of new acquisitions

would cost about \$35,000 annually. Production of service copies would cost about \$750,000. The use of microforms by the "in house" clientele would create a need for special facilities and equipment. At least \$250,000 would be needed for equipment and site preparation. The total bill is calculated at not less than \$3,000,000.

The magnitude of the NLM current hard copy production requires continuous flow processes. There are no single items of hardware or combinations of items capable of hard copy production at prices competitive with the present CopyFlo method. Indeed the paper cost alone for some devices runs between 2 and 6 times the complete unit production cost of the present system.

The pressure for graphic storage and retrieval is strong and will grow stronger as the problems of paper deterioration, space requirements and resource development increase. The high-cost demand systems such as the present NLM interlibrary loan photocopy operation, operating as a single centralized national service, cannot supply the needs of all researchers and clinicians with promptness and efficiency. The real answer lies in expansion of local and regional resources.

GROWTH OF THE LITERATURE

One of the current popular theories is that the doubling span of scientific literature growth is between 10 and 15 years. Two very large NLM collections, reasonably homogeneous in character, indicate the doubling span for medicine is much longer, probably around 25 years. Exhaustive scope policies and collecting practices permit the assumption that at NLM growth of the collections is roughly equivalent to growth of the literature. The division of serials and monographs into chronological groupings, which together comprise close to two-thirds of the total NLM holdings, provide some interesting comparisons based on linear measurements. Limited sampling indicates that such factors as increasing usage of thinner papers and type packing, as well as variant ratios of original articles to special features and advertising, would not substantially affect estimation of growth by linear footage measurement for the particular time periods studied. Moving statistics compiled in 1962 show that the total substantive serial collection amounted to slightly more than 26,000 linear feet. Thirty-two percent of this collection, or 8,320 feet, represents the material published from 1946 through the early part of 1962 (roughly 16 years). The collection of pre-1946 serials measures between 17 and 18 thousand linear feet, slightly more than twice as much footage as the 1946-to-date collection. If the doubling every 10 to 15 years concept is valid, the collections should be of approximately equal size. An examination of nineteenth and twentieth century monographic collections is equally interesting. The nineteenth century collection includes materials published between 1801 and 1913; later material is included in the twentieth century collection. Application of the 10 to 15-year doubling factor would make the twentieth century collection more than 6 times larger than the nineteenth century collection. Actually, it is slightly less than 3 times larger, and this is the ratio which should result with doubling on a 25-year span.

LOANS MADE DURING 1959
FOR INDEXABLE ARTICLES PUBLISHED 1950-1959
(Based on Kurth Survey, Table 23)

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
1	51	Medicine (Balt)	96	100	96.
2	76	Aust Ann Med	159	360	44.2
3	230	Clin Chem	77	180	42.8
4	115	Fed Proc	92	270	34.1
5	54	Amer J Med Techn	150	480	31.3
6	83	Quart J Med	67	240	27.9
7	32	Brain	74	280	26.4
8	59	Circulation	174	720	24.2
9	246	Acta Psychiat Scand	46	200	23.
10	130	J Chronic Dis	124	540	23.
11	277	Acta Soc Med Upsal	59	280	21.1
12	55	Acta Allerg (Kobenhavn)	90	430	20.9
13	84	Scand J Clin Lab Invest	139	680	20.4
14	189	Int Arch Allerg	87	440	19.8
15	155	Thorax	94	480	19.6
16	125	Psychiatry	78	400	19.5
17	240	Rev Franc Etud Clin Biol	77	400	19.3
18	231	Diabetes	78	408	19.1
19	106	Physiol Rev	80	420	19.1
20	71	Aerospace Med	123	660	18.6
21	87	J Clin Path	133	720	18.5
22	10	J Dent Res	195	1,080	18.1
23	28	Amer J Orthopsychiat	108	600	18.
24	137	Psychoanal Quart	42	240	17.5
25	114	Electroenceph Clin Neuro- physiol	120	700	17.1
26	129	Clin Chim Acta	123	750	16.4
27	21	J Nat Cancer Inst	167	1,030	16.2
28	154	Psychosom Med	58	360	16.1
29	269	Pediat Clin N Amer	68	426	16.
30	183	Guy Hosp Rep	59	370	16.
31	207	Brit Med Bull	73	460	15.9
32	161	Yale J Biol Med	57	360	15.8
33	9	J Exp Med	147	960	15.3
34	165	Psychol Bull	36	240	15.
35	128	Clin Sci	95	640	14.8
36	179	Arch Belg Med Soc	74	500	14.8
37	181	J Mount Sinai Hosp NY	62	420	14.8
38	102	Acta Anat (Basel)	110	750	14.7

Loans Made During 1959 for Indexable Articles Published 1950-1959
 (Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
39	33	J Appl Physiol	170	1,200	14.2
40	158	Trans Ass Amer Physicians	59	420	14.1
41	80	J Ment Sci	96	690	13.9
42	140	Brit Heart J	82	610	13.4
43	157	Amer J Optom	79	600	13.2
44	248	Amer J Clin Nutr	71	540	13.2
45	104	Proc Roy Soc [Biol]	55	420	13.1
46	164	Med Serv J Canada	94	720	13.1
47	199	Quart J Stud Alcohol	62	480	12.9
48	182	Psychiat Quart	51	400	12.8
49	238	Cardiologia (Basel)	55	440	12.5
50	295	Brit J Industr Med	53	440	12.1
51	8	J Clin Invest	230	1,920	12.
52	134	J Endocr	93	780	11.9
53	174	J Neurol Neurosurg Psychiat	51	430	11.9
54	252	Res Publ Ass Res Nerv Ment Dis	33	280	11.8
55	117	Acta Otolaryng (Stockholm)	82	700	11.7
56	151	Canad J Biochem	102	900	11.3
57	127	Arch Industr Health (Chicago)	123	1,100	11.2
58	273	J Neuropath Exp Neurol	39	350	11.1
59	279	Minerva Derm	65	600	10.8
60	270	Quart J Exp Physiol	33	310	10.7
61	68	Amer J Hyg	69	660	10.5
62	169	Dis Nerv Syst	75	720	10.4
63	66	J Infect Dis	75	720	10.4
64	98	Int J Psychoanal	56	540	10.4
65	185	Psychol Rev	43	420	10.2
66	298	J Amer Geriat Soc	60	588	10.2
67	44	Amer J Path	67	660	10.2
68	69	Arch Dis Child	107	1,080	9.9
69	40	J Comp Neurol	59	600	9.8
70	57	Calif Med	129	1,320	9.8
71	166	Z Krebsforsch	69	720	9.6
72	36	Ann NY Acad Sci	189	2,000	9.5
73	156	J Neurosurg	73	780	9.4
74	16	Arch Neurol (Chicago)	140	1,500	9.3
75	94	Cancer	117	1,260	9.3

Loans Made During 1959 for Indexable Articles Published 1950-1959
(Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
76	260	Tohoku J Exp Med	60	660	9.1
77	61	J Nerv Ment Dis	87	960	9.1
78	278	Anesth Analg (Cleveland)	38	420	9.1
79	50	Pediatrics	173	1,920	9.
80	263	Antibiotiki	72	800	9.
81	226	Quart Bull Northwest Univ Med Sch	60	680	8.8
82	292	Z Zellforsch	35	400	8.8
83	88	Brit J Exp Path	62	720	8.6
84	202	Acta Paediat (Stockholm)	60	700	8.6
85	195	Deutsch Z Nervenheilk	41	480	8.5
86	175	J Hyg (London)	46	540	8.5
87	62	Bull Hopkins Hosp	51	600	8.5
88	48	Amer J Clin Path	142	1,680	8.5
89	121	Surg Forum	130	1,550	8.4
90	135	J Laryng	70	840	8.3
91	15	New York J Med	219	2,640	8.3
92	204	J Lancet	63	760	8.3
93	92	Blood	109	1,320	8.3
94	153	US Armed Forces Med J	99	1,200	8.3
95	241	Acta Neurol Belg	57	720	7.9
96	266	Med Ann DC	56	720	7.8
97	58	Amer J Trop Med	93	1,200	7.8
98	133	Amer J Anat	23	300	7.7
99	227	Ann Paediat (Basel)	46	600	7.7
100	122	Laryngoscope	55	720	7.6
101	148	Med Clin N Amer	68	900	7.6
102	262	Acta Un Int Cancr	69	920	7.5
103	19	J Lab Clin Med	179	2,400	7.5
104	78	J Immun	89	1,200	7.4
105	222	Neurology (Minneap)	80	1,080	7.4
106	74	Amer J Psychol	59	800	7.4
107	18	Amer J Med Sci	97	1,320	7.4
108	211	Trans Amer Acad Ophthal Otolaryng	66	900	7.3
109	180	Plast Reconstr Surg	79	1,080	7.3
110	205	Trans Roy Soc Trop Med Hyg	48	660	7.3
111	118	Brit J Surg	58	800	7.3
112	143	Industr Med Surg	77	1,080	7.1
113	224	Helv Med Acta	44	620	7.1
114	294	Acta Physiol Acad Sci Hung	65	920	7.1

Loans Made During 1959 for Indexable Articles Published 1950-1959
(Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
115	37	Anat Rec	65	920	7.1
116	160	Virginia Med Monthly	76	1,080	7.
117	79	Gastroenterology	118	1,680	7.
118	194	Brit J Derm	42	600	7.
119	296	Bull WHO	63	900	7.
120	75	J Anat	37	530	7.
121	26	Acta Med Scand	131	1,920	6.8
122	65	Amer J Med	129	1,920	6.7
123	20	Arch Intern Med (Chicago)	128	1,920	6.7
124	232	Postgrad Med J	64	960	6.7
125	177	Graefe Arch Ophthal	37	560	6.6
126	286	Schweiz Z Allg Path	56	850	6.6
127	89	J Clin Endocr	110	1,680	6.6
128	213	J Cell Comp Physiol	39	600	6.5
129	81	S Afr Med J	135	2,080	6.5
130	7	New Eng J Med	302	4,680	6.5
131	35	J Path Bact	99	1,550	6.4
132	12	Science	197	3,120	6.3
133	229	Bull NY Acad Med	58	920	6.3
134	163	Indian J Med Res	42	680	6.2
135	29	Ann Intern Med	137	2,230	6.1
136	178	Arch Psychiat Nervenkr	43	700	6.1
137	259	Northwest Med	44	720	6.1
138	82	Pflueger Arch Ges Physiol	51	840	6.1
139	235	Amer J Ment Defic	63	1,050	6.
140	285	Pediatric	67	1,120	6.
141	110	J Physiol (Paris)	88	1,480	6.
142	196	J Gen Physiol	32	540	5.9
143	236	Arch Mal Coeur	49	840	5.8
144	289	Conn Med	56	960	5.8
145	1	Lancet	388	6,680	5.8
146	206	Anesthesiology	59	1,020	5.8
147	136	Acta Physiol Scand	75	1,300	5.8
148	257	E Afr Med J	38	660	5.8
149	168	Arch Franc Pediat	85	1,500	5.7
150	244	Eye Ear Nose Throat Monthly	52	920	5.7
151	218	Edinburgh Med J	11	195	5.6
152	280	New Zeal Med J	59	1,080	5.5

Loans Made During 1959 for Indexable Articles Published 1950-1959
(Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
153	111	Aerztl Wschr	134	2,480	5.4
154	147	J Indian Med Ass	103	1,920	5.4
155	287	Texas J Med	45	840	5.4
156	99	J Abnorm Soc Psychol	77	1,440	5.4
157	145	J Parasit	48	900	5.3
158	31	J Exp Psychol	70	1,320	5.3
159	198	J Mich Med Soc	76	1,440	5.3
160	85	Southern Med J	101	1,920	5.3
161	233	Z Kinderheilk	52	990	5.3
162	3	Amer J Physiol	250	4,780	5.2
163	216	J Gen Microbiol	72	1,380	5.2
164	219	Dermatologica (Basel)	50	960	5.2
165	251	Ophthalmologica (Basel)	50	960	5.2
166	281	USAF Sch Aviat Med	52	1,023	5.1
167	209	Fiziol Zh SSSR Sechenov	70	1,390	5.
168	109	Cancer Res	92	1,840	5.
169	184	Proc Mayo Clin	48	960	5.
170	96	Arch Ophthal (Chicago)	101	2,040	5.
171	284	Ohio Med J	47	960	4.9
172	39	Arch Path (Chicago)	82	1,680	4.9
173	30	Canad Med Ass J	175	3,600	4.9
174	17	Proc Roy Soc Med	145	3,000	4.8
175	170	Chin Med J	49	1,020	4.8
176	49	Amer J Dis Child	86	1,800	4.8
177	112	J Bone Joint Surg [Amer]	60	1,260	4.8
178	123	Acta Radiol (Stockholm)	60	1,280	4.7
179	265	Beitr Path Anat	12	260	4.6
180	197	Minnesota Med	61	1,320	4.6
181	131	Amer J Public Health	83	1,800	4.6
182	167	Acta Endocr (Kobenhavn)	96	2,100	4.6
183	159	J Obstet Gynaec Brit Emp	63	1,380	4.6
184	23	Med J Aust	165	3,640	4.5
185	255	Amer Surg	73	1,620	4.5
186	271	Rev Path Gen	50	1,110	4.5
187	212	Ann Medicopsychol (Paris)	58	1,300	4.5
188	63	J Pharmacol Exp Ther	75	1,680	4.5
189	73	J Comp Physiol Psychol	40	900	4.4
190	97	Fortschr Roentgenstr	99	2,240	4.4
191	173	J Gen Psychol	22	500	4.4
192	254	Bull Soc Ophtal Franc	49	1,120	4.4

Loans Made During 1959 for Indexable Articles Published 1950-1959
(Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
193	124	Strahlentherapie	96	2,200	4.4
194	132	Ann Otol	41	960	4.3
195	43	Schweiz Med Wschr	111	2,600	4.3
196	268	Indian Med Gaz	21	495	4.2
197	190	Z Ges Exp Med	47	1,120	4.2
198	22	Ann Surg	100	2,400	4.2
199	11	J Amer Dent Ass	59	1,440	4.1
200	13	Nature (London)	234	5,720	4.1
201	14	Surg Gynec Obstet	108	2,640	4.1
202	6	Proc Soc Exp Biol Med	269	6,600	4.1
203	297	Illinois Med J	44	1,080	4.1
204	108	Sem Med (B Air)	84	2,070	4.1
205	249	J Consult Psychol	51	1,260	4.1
206	275	Zbl Allg Path	40	990	4.
207	100	Arch Otolaryng (Chicago)	58	1,440	4.
208	107	Rev Neurol (Paris)	65	1,620	4.
209	210	Riforma Med	61	1,560	3.9
210	91	Endocrinology	70	1,800	3.9
211	221	Med Times	65	1,680	3.9
212	172	Zbl Bakt [Orig]	51	1,320	3.9
213	42	Amer J Psychiat	97	2,520	3.9
214	237	Brit J Ophthal	46	1,200	3.8
215	152	Practitioner	78	2,040	3.8
216	208	Experientia	73	1,920	3.8
217	120	Brit J Radiol	59	1,560	3.8
218	282	Arzneimittelforschung	67	1,785	3.8
219	45	Presse Med	135	3,640	3.7
220	2	Brit Med J	346	9,360	3.7
221	95	Public Health Rep	62	1,680	3.7
222	116	Radiology	62	1,680	3.7
223	276	Arch Int Pharmacodyn	48	1,320	3.6
224	264	Arch Gynaek	26	720	3.6
225	72	Bull Soc Med Hop Paris	72	2,000	3.6
226	34	Amer J Obstet Gynec	106	3,000	3.5
227	138	J Pediat	67	1,920	3.5
228	93	Surgery	88	2,520	3.5
229	245	J Thorac Cardio Surg	42	1,210	3.5
230	191	Rev Clin Esp	70	2,020	3.5
231	187	Acta Chir Scand	55	1,590	3.5
232	103	Zbl Chir	90	2,600	3.5
233	47	Klin Wschr	99	2,880	3.4

Loans Made During 1959 for Indexable Articles Published 1950-1959
(Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
234	56	Amer J Ophthal	115	3,360	3.4
235	192	Z Ges Inn Med	88	2,640	3.3
236	256	Bull Soc Chim Biol (Paris)	58	1,760	3.3
237	217	Obstet Gynec	79	2,400	3.3
238	60	Amer J Roentgen	59	1,800	3.3
239	261	Z Klin Med	16	490	3.3
240	267	Western J Surg	39	1,200	3.3
241	171	Hoppe Seyler Z Physiol Chem	35	1,140	3.1
242	5	J Biol Chem	165	5,400	3.1
243	239	Postgrad Med	66	2,160	3.1
244	27	Boll Soc Ital Biol Sper	198	6,590	3.
245	220	J Invest Derm	54	1,800	3.
246	144	Ugeskr Laeg	93	3,120	3.
247	291	Surg Clin N Amer	41	1,380	3.
248	52	Sem Hop Paris	168	5,670	3.
249	141	Klin Mbl Augenheilk	53	1,800	2.9
250	203	Biull Eksp Biol Med	70	2,400	2.9
251	225	Klin Med (Moskva)	70	2,400	2.9
252	41	Minerva Med	179	6,180	2.9
253	193	Ann Inst Pasteur (Paris)	55	1,920	2.9
254	113	Cas Lek Cesk	92	3,220	2.9
255	215	Bull Soc Path Exot	49	1,730	2.8
256	70	J Bact	81	2,880	2.8
257	234	Proc Nat Acad Sci USA	47	1,680	2.8
258	46	Arch Derm (Chicago)	77	2,760	2.8
259	228	Biochem Z	20	720	2.8
260	126	Zbl Gynaek	71	2,600	2.7
261	64	Virchow Arch Path Anat	21	770	2.7
262	4	JAMA	253	9,360	2.7
263	250	Mod Hosp	54	2,040	2.7
264	24	Biochem J	133	5,160	2.6
265	90	Nord Med	104	4,080	2.6
266	288	Voennomed Zh	54	2,160	2.5
267	253	Bull Acad Nat Med (Paris)	35	1,440	2.4
268	300	Minerva Pediat	63	2,600	2.4
269	258	J Genet Psychol	13	540	2.4
270	105	Biochim Biophys Acta	138	5,740	2.4
271	53	Arch Surg (Chicago)	71	3,000	2.4
272	214	Svensk Lakartidn	72	3,120	2.3

Loans Made During 1959 for Indexable Articles Published 1950-1959
 (Based on Kurth Survey, Table 23)-Continued

Rank	Kurth Survey Rank	PERIODICAL	Loan Requests 1950-1959	Indexable Articles 1950-1959	Loans Per 100 Indexable Articles
273	162	Orv Hetil	83	3,640	2.3
274	223	Amer Rev Resp Dis	56	2,500	2.2
275	242	Bull Soc Franc Derm Syph	41	1,870	2.2
276	201	Concours Med	84	3,880	2.2
277	150	Wien Klin Wschr	55	2,600	2.1
278	142	Naunyn Schmiedeberg Arch Exp Path	48	2,310	2.1
279	176	Medizinische	95	4,776	2.
280	149	Prensa Med Argent	81	4,160	2.
281	139	Amer J Surg	60	3,120	1.9
282	188	Amer Heart J	36	1,920	1.9
283	38	J Physiol (London)	74	4,230	1.8
284	101	C R Acad Sci (Paris)	78	4,490	1.7
285	299	J Amer Vet Med Ass	34	2,040	1.7
286	77	Nederl T Geneesk	86	5,320	1.6
287	272	Arch Ohr Nas Kehlkopfheilk	21	1,360	1.5
288	290	Pol Tyg Lek	64	4,160	1.5
289	67	Munchen Med Wschr	81	5,720	1.4
290	243	Dia Med	54	3,840	1.4
291	86	Deutsch Med Wschr	78	5,580	1.4
292	119	Med Klin	83	6,240	1.3
293	247	Wien Med Wschr	47	3,640	1.3
294	293	Arch Biochem	44	4,200	1.1
295	25	C R Soc Biol (Paris)	78	7,650	1.
		Total	24,361	492,036	4.95

ACQUISITION ACTIVITIES

	<u>1961</u>	<u>1962</u>	<u>1963</u>
SEARCHING			
Prospects considered for acquisition, not in Library	29,275	22,531	26,806
Prospects considered for acquisition, Library has	<u>19,763</u>	<u>13,991</u>	<u>11,912</u>
Total	49,038	36,522	38,718
<hr/>			
ORDERS PLACED	19,800	16,397	15,576
SERIAL RECORD			
New titles added	1,336	739	956
Titles currently received (as of end of year)	14,082*	14,875*	13,888**
PUBLICATIONS ADDED			
Serial Pieces	69,968	63,959	67,832
Other	16,951	11,338	16,151
<hr/>			
OBLIGATIONS FOR PUBLICATIONS	\$85,300	\$85,000	\$87,000
(Included for rare books	8,323	8,981	11,873)

*At least one issue received since January 1955.

**At least one issue received since January 1959.

GROWTH OF COLLECTIONS

	<u>CURRENT YEAR</u>			<u>COLLECTION TOTALS</u>	
	<u>Added</u>	<u>With- drawn</u>	<u>Net Gain</u>	<u>30 June 1962</u>	<u>30 June 1963</u>
<u>BOOK MATERIAL</u>					
1. Bound Monographs					
a. HMD	417	11	406	34,285	34,691
b. 1801 1913	17	286	-269	88,914	88,645
c. 1914-	<u>5,873</u>	<u>344</u>	<u>5,529</u>	<u>164,365</u>	<u>169,894</u>
Subtotal (1)	6,307	641	5,666	287,564	293,230
2. Bound Serials	<u>5,366</u>	<u>0</u>	<u>5,366</u>	<u>270,873</u>	<u>276,239</u>
Total Bound Volumes (1+2)	11,673	641	11,032	558,437	569,469
3. Theses	130	0	130	284,882	285,012
4. Pamphlets	<u>1,394</u>	<u>0</u>	<u>1,394</u>	<u>165,909</u>	<u>167,303</u>
Subtotal (3+4)	<u>1,524</u>	<u>0</u>	<u>1,524</u>	<u>450,791</u>	<u>452,315</u>
TOTAL BOOK MATERIAL	13,197	641	12,556	1,009,228	1,021,784
<u>NON-BOOK MATERIAL</u>					
1. Microfilms	360	0	360	2,523	2,883
2. Portraits, Pictures	<u>877</u>	<u>43</u>	<u>834</u>	<u>57,505</u>	<u>58,339</u>
TOTAL NON-BOOK MATERIAL	1,237	43	1,194	60,028	61,222
BOUND VOLUME EQUIVALENTS				<u>15,000</u>	<u>15,000</u>
GRAND TOTAL	14,434	684	13,750	1,084,256	1,098,006

CATALOGING STATISTICS

	<u>1961</u>	<u>1962</u>	<u>1963</u>
<u>COMPLETED CATALOGING</u>			
New titles	12,284	11,719	11,090
Recataloged titles	<u>14,902</u>	<u>5,538</u>	<u>4,183</u>
TOTAL	27,186	17,257	15,273
Volumes reclassified and/or transferred	1,348	3,474	3,797
Catalog cards filed	135,683	121,220	90,879
Volumes shelved	43,663	31,163	49,300
Volumes withdrawn	1,855	1,497	630
<hr/>			
WORK IN PROCESS - Pieces	4,300	4,572	7,069

NATIONAL LIBRARY OF MEDICINE CATALOG
(Annual)

	<u>1960</u>	<u>1961</u>	<u>1962</u>
<u>NUMBER OF ENTRIES</u>			
Main	18,219	20,260	15,592
Added	4,614	6,510	4,495
Name cross-references	3,644	5,003	3,706

REFERENCE SERVICES

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Requests by telephone	5,740	5,661	7,048
Government	(3,736)	(3,793)	(4,435)
Non-Government	(2,004)	(1,868)	(2,613)
Requests by mail	1,215	1,239	1,288
Government	(145)	(167)	(151)
Non-Government	(1,070)	(1,072)	(1,137)
Readers assisted	3,135	3,342	5,082
Government	(797)	(956)	(1,518)
Non-Government	(2,338)	(2,386)	(3,564)
Total	10,090	10,242	13,418
Government	(4,678)	(4,916)	(6,104)
Non-Government	(5,412)	(5,326)	(7,314)
Readers counted	9,984	11,544	21,484

BINDING STATISTICS

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Volumes sent to binder	13,855	10,870	13,630
Volumes returned from binder and processed	11,518	13,838	11,440
New volumes	(8,018)	(9,927)	(9,468)
Rebinds	(3,500)	(3,911)	(1,972)
Volumes bound at NLM	2,624	3,721	2,374
Volumes repaired at NLM	2,360	1,105	785
Volumes and pieces lettered	34,591	26,119	33,519
Pictures mounted	116	31	54

CIRCULATION STATISTICS

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Requests received	174,781	178,860	233,647
Requests filled	152,768	161,090	205,709
Requests unfilled	22,013	17,770	27,938
Rejected	(4,198)	(3,039)	(4,692)
Unavailable	(17,815)	(14,731)	(23,246)
Percentage of requests filled	87.4	90.0	88.0

ITEMS USED, BY MAJOR CATEGORY

Readers' requests in Library	43,510	47,605	70,791
Interlibrary loans	109,258	113,485	134,918
Photocopy	(102,463)	(106,967)	(128,399)
Original - Government	(3,130)	(3,334)	(3,282)
- Non-Government	(3,665)	(3,184)	(3,237)

UNAVAILABLES

	By percentage of total <u>unavailables</u>			By percentage of total <u>requests accepted</u>	
	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1962</u>	<u>1963</u>
Already on loan	8.2	4.3	8.9	0.4	0.9
Not in collection	32.8	42.0	30.4	3.6	3.1
At bindery	18.1	5.7	26.4	2.2	2.6
Missing	10.3	15.7	15.0	1.2	1.5
Does not circulate	6.1	7.3	7.4	0.6	0.7
Not identified	11.6	16.0	5.0	1.3	0.5
In process	11.4	8.0	6.9	0.7	0.7
At HMD	<u>1.5</u>	<u>1.0</u>	<u>- -</u>	<u>0.1</u>	<u>- -</u>
	100.0	100.0	100.0	10.1	10.0

PHOTOGRAPHIC SERVICES

TABLE I - EXTERNAL ORDERS

	<u>1961</u>	<u>1962</u>	<u>1963</u>
<u>EXTERNAL ORDERS COMPLETED</u>	104,943	108,454	130,290
By type of order:			
Interlibrary loan	(102,463)	(106,967)	(128,399)
Coupon, paid, special	(2,480)	(1,487)	(1,891)
By type of service:			
Microfilm	(42)	(247)	(161)
CopyFlo	(97,353)	(96,907)	(126,812)
Photostat	(3,507)	(188)	(685)
Xerox 914 Copier	(3,204)	(10,476)	(2,017)
Photoprints	(176)	(205)	(230)
Photographs and slides	(661)	(431)	(385)

PAGES DUPLICATED FOR ORDERS

Microfilm:	2,072,119	2,243,862	2,296,620
For CopyFlo orders	(2,037,757)	(2,229,372)	(2,284,401)
For microfilm orders	(34,362)	(14,490)	(12,219)
CopyFlo (from film file)	13,760	5,223	5,583
Photostat	16,475	1,081	3,564
Xerox 914 Copier	31,644	103,160	17,996
Photoprints	1,526	2,454	2,220
Photographs and slides	<u>1,359</u>	<u>658</u>	<u>659</u>
Total	2,136,883	2,356,438	2,326,642

CARDS

Microfilm	750	0	0
CopyFlo	<u>11,250</u>	<u>6,583</u>	<u>27</u>
Total	12,000	6,583	27

PHOTOGRAPHIC SERVICES

TABLE II - INTERNAL ORDERS

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Microfilm pages	703,433	596,538	919,029
For film file	(0)	(6,644)	(80,764)*
For poor paper program	(689,954)	(570,662)	(821,989)
For interoffice orders	(13,479)	(19,232)	(16,276)
Paper reproduction pages	29,919	70,710	141,332
Photostat	(3,133)	(1,120)	(844)
CopyFlo	(19,186)	(31,549)	(43,702)
Photoprints	(116)	(486)	(12)
Xerox 914 Copier	(7,484)	(37,555)	(96,774)
Photographs and slides	1,975	2,054	1,887
Cards - Microfilm	267,097	199,701	185,319
- CopyFlo	297,642	227,232	276,704

TABLE III - TOTAL PRODUCTION

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Microfilm pages	2,775,552	2,840,400	3,215,649
CopyFlo pages	2,070,703	2,266,144	2,333,686
Photostat pages	19,608	2,201	4,408
Xerox 914 Copier	39,128	140,715	114,770
Photoprints	1,642	2,940	2,232
Photographs and slides	3,334	2,712	2,546
Cards - Microfilm	267,847	199,701	185,319
- CopyFlo	308,892	233,815	276,731

TABLE IV - ORDERS COMPLETED AS INTERLIBRARY LOANS

	<u>1963</u>		<u>Total</u>
	<u>Government</u>	<u>Non-Government</u>	
Metropolitan Washington	18,913	6,573	25,486
Outside Washington (U.S.A.)	22,954	57,354	80,308
Overseas	<u>6,100</u>	<u>16,505</u>	<u>22,605</u>
Total	47,967	80,432	128,399

*History of Medicine Division

HISTORY OF MEDICINE

	<u>1961</u>	<u>1962</u>	<u>1963</u>
<u>ACQUISITION</u>			
Editions searched	5,012	1,974	3,482
Editions recommended for purchase	495	303	455
Editions added to collection	388	147	300
In book form	(382)	(145)	(297)
In microfilm	(6)	(2)	(3)
<hr/>			
<u>CATALOGING</u>			
Editions cataloged	357	186	1,217
Card mats produced	1,650	1,232	368
Catalog cards filed	5,789	4,497	5,231
<hr/>			
<u>BINDING</u>			
At commercial bindery	38	81	0
At hand bindery	<u>56</u>	<u>52</u>	<u>0</u>
Total books bound	94	133	0
<hr/>			
<u>REFERENCE</u>			
Readers	138	160	176
Interlibrary loan and photo-duplication orders	545	433	426
Original material loaned	(282)	(237)	(179)
Photocopies	(263)	(196)	(247)
<hr/>			
<u>PAGES FILMED</u>			
For loan and special orders	17,720	11,765	4,376
For security	21,963	598	77,091
For acquisition	<u>749</u>	<u>715</u>	<u>0</u>
	40,432	13,078	81,467
<hr/>			
<u>PRINTS AND PHOTOGRAPHS</u>			
Materials added to collection	813	473	876
Pictures	(738)	(471)	(876)
Other (e.g., lantern slides)	(75)	(2)	(0)
Pictures cataloged/indexed	555	592	438
Reference use of material (total of pictures supplied)	1,214	805	713
Reference questions answered	307	220	226
By telephone	(118)	(76)	(69)
By mail	(98)	(97)	(102)
In person	(91)	(47)	(55)

INDEX MEDICUS

<u>DISTRIBUTION</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
<u>Paid Subscriptions</u>			
United States	2,473	2,485	2,492
Foreign	<u>1,591</u>	<u>1,740</u>	<u>1,746</u>
Total	4,064	4,225	4,238
<u>Gift and Exchange</u>			
United States	786	757	764
Foreign	<u>900</u>	<u>947</u>	<u>926</u>
Total	1,686	1,704	1,690
GPO Single Copy Sales and Stock	1,047	1,186*	1,154
Depository Libraries	289	289	308
NLM Internal Use and Stock	<u>114</u>	<u>96*</u>	<u>110</u>
Total Distribution	7,200	7,500	7,500

JOURNAL TITLES INDEXED	1,775	2,132	2,244
CITATIONS PUBLISHED	130,000	141,911	139,462

*Corrected figures

INDEX MEDICUS
SCHEDULE OF COMPLETED ISSUES

Issue	1962		1963			
	No. of Items	Date Shipped	Date Received	No. of Items	Date Shipped	Date Received
	<u>Vol. 2, Nos. 7-12</u>					
July	12,939	June 9	July 12	13,625	June 7	July 9
August	12,368	July 7	Aug. 16	10,934	July 12	Aug. 16
September	12,555	Aug. 10	Aug. 31	14,188	Aug. 10	Sept. 4
October	12,251	Sept. 8	Sept. 27	12,811	Sept. 11	Oct. 1
November	13,325	Oct. 10	Oct. 26	9,875	Oct. 10	Oct. 30
December	10,410	Nov. 10	Nov. 27	15,840	Nov. 14	Dec. 27
	<u>Vol. 3, Nos. 1-6</u>					
	<u>Vol. 4, Nos. 1-6</u>					
January	10,380	Dec. 12	Dec. 28	7,035	Dec. 20	Jan. 16
February	9,577	Jan. 10	Jan. 29	6,529	Jan. 14	Feb. 5
March	13,534	Feb. 12	Mar. 2	10,537	Feb. 8	Mar. 1
April	11,825	Mar. 12	Mar. 30	12,042	Mar. 13	Apr. 9
May	11,557	Apr. 12	May 1	14,046	Apr. 16	May 10
June	<u>11,190</u>	May 10	May 28	<u>12,000</u>	May 13	June 4
	Total	141,911		139,462		

COMPUTER UTILIZATION

1963

<u>Category of Use</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Program Testing	28:29	224:00	230:16	203:16	686:01
System Testing	4:34	30:04	18:29	31:09	84:16
Production		7:29	24:27	6:25	38:21
Rerun System	<u> </u>	<u>5:18</u>	<u>1:01</u>	<u>0:30</u>	<u>6:49</u>
Total Use	33:03	266:51	274:13	241:20	815:27
<hr/>					
Downtime	1:36	15:55	8:45	10:25	36:41
Uptime	96%	94%	97%	96%	96%

PERSONNEL STATISTICS

TABLE I - PERSONNEL ON DUTY

	<u>1962</u>	<u>1963</u>
Personnel authorized	234	242
Personnel on duty (at end of year)	211	240
Average number of persons employed	209	227

PERSONNEL ON DUTY

Office of the Director	28	32
Extramural Program	7	8
Bibliographic Services Division	45	60
History of Medicine Division	7	12
Reference Services Division	65	68
Technical Services Division	<u>59</u>	<u>60</u>
	211	240

TABLE II - PERSONNEL ACTIONS

	<u>1962</u>	<u>1963</u>
ACCESSIONS	67	89
Career Conditional	(11)	(29)
Temporary	(23)	(37)
Reinstatements	(9)	(8)
Transfers (to NLM)	(22)	(14)
Commissioned Officers	(2)	(1)
LOSSES	72	60
Resignations	(19)	(29)
Expiration of appointments	(4)	(2)
Transfers	(37)	(23)
Separations	(4)	(1)
Retirements	(6)	(2)
Deaths	(1)	(3)
Commissioned Officers	(1)	(0)
CONVERSION TO CAREER - CAREER CONDITIONAL	21	15
PROMOTIONS	48	76
REASSIGNMENTS	37	46
CHANGE TO LOWER GRADE	2	1
PAY ADJUSTMENTS	8	0

FINANCIAL STATISTICS

<u>Obligations for</u>			
<u>Library services and resources</u>	<u>FY 1961</u>	<u>FY 1962</u>	<u>FY 1963</u>
11 Personnel Compensation	\$1,285,179	\$1,260,116	\$1,392,517
12 Personnel Benefits	91,543	96,418	106,311
21 Travel	18,756	22,599	20,116
22 Transportation of Things	970	3,993	4,300
23 Rent, Communication, and Utilities	44,201	53,689	120,733
24 Printing, Binding, and Reproduction	131,681	86,528	103,257
25 Other Services	36,792	208,002	1,265,043
26 Supplies and Materials	46,652	40,695	66,688
31 Equipment (Books)	94,277 (85,655)	89,749 (85,046)	241,688 (89,449)
41 Grants	0	0	5,579
Appropriation Transfer to LC	<u>8,000</u>	<u>8,000</u>	<u>8,000</u>
ESTIMATED TOTAL OPERATING COST	\$1,758,051	\$1,869,789	\$3,334,232

Other Obligations

Science Transation Program	0	\$ 389,604*	0**
Scientific Activities Overseas:			
Transfers to NSF	0	732,820	\$ 537,760
Director obligations	0	0	4,300
Construction of Library Building	\$ 379,382	459,409	349,474
MEDLARS	0	1,039,029	0**
Council on Library Resources Fund	373	0	0
Collections for Photoduplication Services	<u>1,225</u>	<u>2,079</u>	<u>2,304</u>

*Includes \$129,061 obligated by NIH for grants

**In FY 1962 these activities were funded from other appropriations and reported separately. They are now included in Object Class 25 under Obligations for Library Services and Resources.

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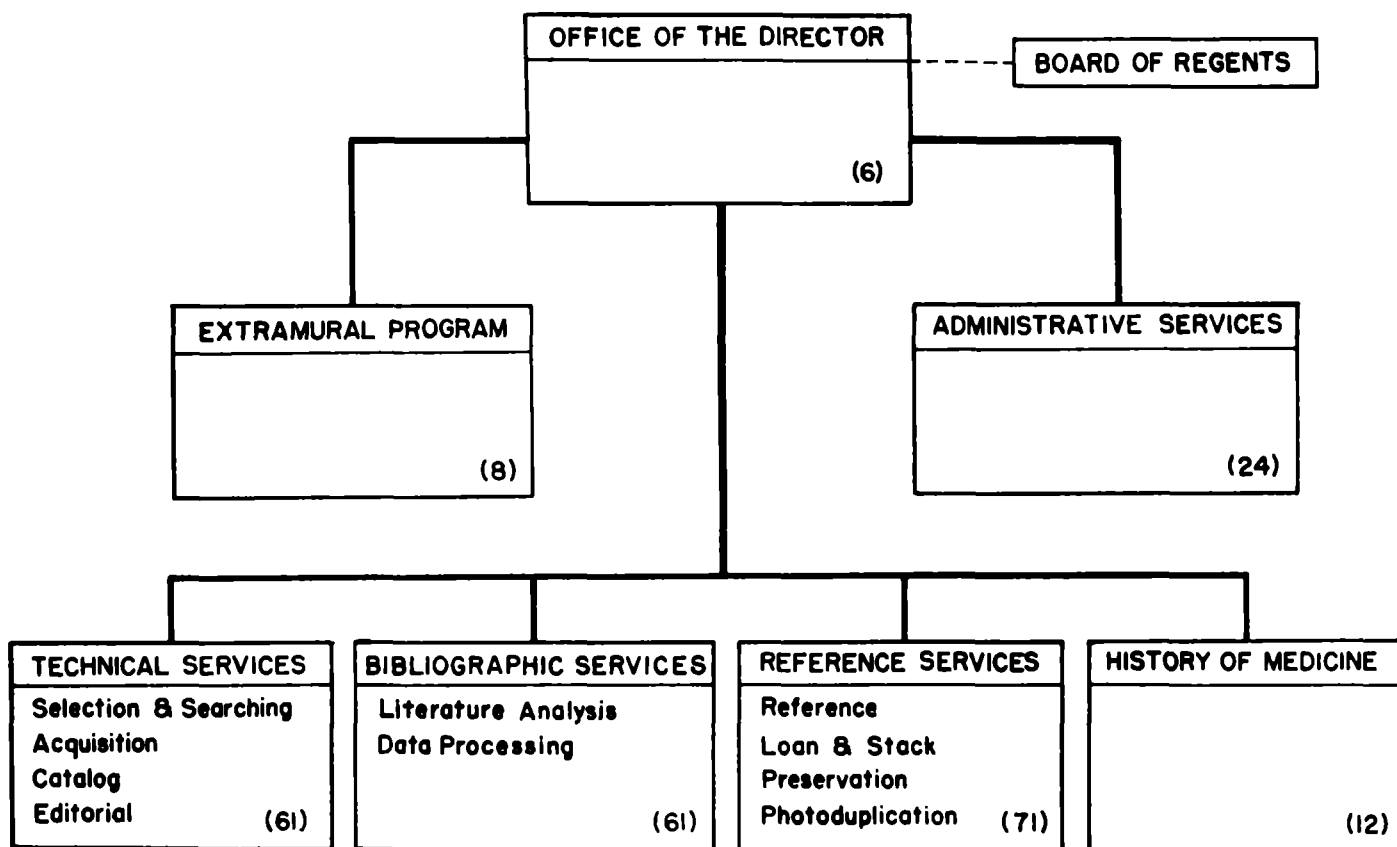
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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE



NATIONAL LIBRARY OF MEDICINE

BETHESDA, MARYLAND



June 30, 1963