

EVW

F

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

Fiscal Year 1965

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

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

for the

FISCAL YEAR 1965

July 1966

C O N T E N T S

	Page
Key Personnel	i
Foreword	iii
CHAPTER ONE - Office of the Director	1
Drug Literature Program	15
Medical Subject Headings	17
TWO - Extramural Program	24
THREE - Technical Services Division	46
FOUR - Bibliographic Services Division	58
FIVE - Data Processing Division	79
SIX - Reference Services Division	83
SEVEN - History of Medicine Division	92
APPENDICES (following page 94)	
I - Acquisition Activities	
II - Growth of Collections	
III - Cataloging Statistics; <u>NLM Annual Catalog</u>	
IV - Reference Services; Binding Statistics	
V - Circulation Statistics	
VI - Photographic Services	
Table I - External Orders	
VII - Photographic Services	
Table II - Internal Orders	
III - Total Production	
IV - Orders Completed as Interlibrary Loans	
VIII - History of Medicine Division	
IX - <u>Index Medicus</u>	
X - Schedule of Completed Issues, <u>Index Medicus</u>	
XI - Computer Utilization	
XII - Personnel Statistics	
Table I - Personnel on Duty	
II - Personnel Actions	
XIII - Financial Statistics	
XIV - Publications	
XV - Organization Chart	

KEY PERSONNEL OF THE NATIONAL LIBRARY OF MEDICINE

June 30, 1965

OFFICE OF THE DIRECTOR

Director	Dr. Martin M. Cummings
Deputy Director	Mr. Scott Adams
Assistant to the Director	Mr. M. Daniel Bailey
Public Information Officer	Mr. Robert M. Wilson
Special Assistant to the Director	Dr. Peter D. Olch
Science Communication Specialist	Dr. Charles L. Bernier
Special Assistant to the Deputy Director	Miss Winifred E. Sewell
Executive Officer	(Vacancy)
Assistant Executive Officer	Mr. John P. Spain
Administrative Officer	Mr. James D. Lawrence
Personnel Officer	Mr. Jerome N. Kerkof
Property and Supply Officer	Mr. Joseph McGroarty

EXTRAMURAL PROGRAMS

Associate Director for Extramural Programs	Dr. Marjorie P. Wilson
Staff Assistant	Mrs. Maxine K. Hanke

Publications and Translations Division

Chief	Miss Mary E. Corning
-------	----------------------

Research and Training Division

Chief	Dr. Carl D. Douglass
-------	----------------------

INTRAMURAL PROGRAMS

Associate Director for Intramural Programs	(Vacancy)
--	-----------

Bibliographic Services Division

Chief	Dr. Leonard Karel
Deputy Chief	(Vacancy)
Head, Index Section	Mr. Constantine J. Gillespie
Head, Search Section	Miss Charlotte Kenton
Head, Training Section	Dr. Hugo A. Borresen

Data Processing Division

Chief	Mr. Charles J. Austin
Deputy Chief	Mr. Paul C. Redmer
Computer Systems Analyst	Mr. Irvin J. Weiss
Head, Input Section	Mrs. Audrey L. Milner
Head, Operations Section	Mr. Daniel Belsole
Head, Programming Section	(Vacancy)

History of Medicine Division

Chief	Dr. John B. Blake
-------	-------------------

References Services Division

Chief

Deputy Chief

Head, Loan and Stack Section

Head, Photoduplication Section

Acting Head, Preservation Section

Head, Reference Section

Dr. David A. Kronick

Mr. Edward A. Miller

Mr. Thomas R. Cassidy

Mr. Svend A. Andersen

Mr. Thomas R. Cassidy

Mr. Charles A. Roos

Technical Services Division

Chief

Deputy Chief

Coordinator for the Development of
the Collection

Head, Acquisition Section

Head, Cataloging Section

Head, Catalog Maintenance Section

Head, Selection and Searching Section

Mr. Samuel Lazerow

Dr. Robert F. Clarke

Dr. Louis S. Gerber

Miss Elizabeth Sawyers

Miss Emilie V. Wiggins

Mrs. Marian B. Abbott

Dr. Galina Zarechnak

FOREWORD

In June 1965 the National Library of Medicine held the John Shaw Billings Centennial honoring the physician who assumed directorship of the Library of the Surgeon General, U. S. Army, in 1865. The symposium reviewed Dr. Billings' contributions which shaped the functions of the Library in subsequent years; it also highlighted the public interest in the Library's future as a national center for biomedical communications.

The Billings Centennial was an occasion which marked the closing of a fiscal year in which the Library developed many new relationships with other organizations, both governmental and nongovernmental, national and international.

At the national policy and planning level, the information needs of biomedical scientists, educators, and practitioners received concentrated attention. Study of this problem by the President's Commission on Mental Retardation resulted in the Warren Plan. The President's Commission on Heart Disease, Cancer, and Stroke recommended programs to strengthen medical libraries to improve access to health information. The Committee on Scientific and Technical Information (COSATI) of the Federal Council of Science and Technology initiated studies and plans to systematize Federal efforts to ameliorate the flow of scientific information. All of these considerations at the White House level involved the National Library of Medicine's programs and plans.

At the Congressional level, the Library responded to the introduction by Senator Lister Hill on January 19 of S.597, The Medical Library Assistance Act of 1965. A major effort was made to collect information and data of use to the Congress and the Administration in their consideration of this key legislation. In the process the Library developed new relationships and strengthened existing ones with the academic and the library communities.

With other Federal Agencies concerned with advancing health it developed both formal and informal cooperative agreements. Formal agreements were signed with the Veterans Administration, the Food and Drug Administration, and the Agency for International Development.

Finally, it developed productive relationships with the scientific and professional communities, as represented by such organizations as The Association of American Medical Colleges, the Federation of American Societies for Experimental Biology, the American Medical Association, and the American Dental Association.

Interaction with all these interests has provided the Library with an awareness of the nationwide interest in the problems of communication in biomedicine, and of the significance of the potential role which medical libraries can play in resolving them. National needs for improved library and information services have been re-defined, and national goals established.

The report for the period July 1, 1964 through June 30, 1965, which follows, records not only the Library's participation in this national inquiry, but also the ever-increasing services and support the Library provided to workers in the medical and related health sciences in the conduct of its mission.

CHAPTER ONE

OFFICE OF THE DIRECTOR

In consonance with its emerging function as a national focus for programs and activities designed to improve the flow of information in the biomedical sciences, the Library pursued opportunities for developing its services to the fullest extent of its resources. Leadership is a complex function involving planning, direction, coordination and liaison, and the provision of resources and administrative support services.

In exercising leadership, the Office of the Director has benefited from the unfailing support provided by the Library's Board of Regents and by the Office of the Surgeon General.

BOARD OF REGENTS

Drs. Walsh McDermott, Morris Tager, and Barnes Woodhall received appointments to the Board of Regents and Rear Admiral Robert B. Brown, M. C., succeeded Rear Admiral E. C. Kenny, M. C., during the year. The membership of the Board at the end of the fiscal year was:

Major General Richard L. Bohannon (U. S. Air Force)
Rear Admiral Robert B. Brown (U. S. Navy)
Dr. Harve J. Carlson (National Science Foundation)
Dr. Russell A. Dixon (Howard University)
Dr. Herman H. Fussler (University of Chicago)
Dr. Alfred A. Gellhorn (Columbia University)
Dr. Henry N. Harkins (University of Washington)
Lieutenant General Leonard D. Heaton (U. S. Army)
Dr. William N. Hubbard, Jr. (University of Michigan)
Dr. Walsh McDermott (Cornell University)
Dr. Joseph H. McNinch (Veterans Administration)
Dr. L. Quincy Mumford (Library of Congress)
Dr. Morris Tager (Emory University)
Dr. Barnes Woodhall (Duke University)

The Board met on November 6, 1964, on March 18-19, 1965, and on June 17-18, 1965.

At the November meeting, Dr. Luther L. Terry, Surgeon General of the Public Health Service, referred to the Comptroller General's opinion of March 4, 1964, which concurred with PHS interpretation of statutory authority for the Library to use grants to support activities relating to the communication of research results. He noted that PHS had delegated authority to the Library for research fellowships, traineeships,

grants-in-aid related to Library-based programs in health communications. Since there was no clear authority for certain activities the Library wished to undertake, work was proceeding on proposed legislation to be introduced by Senator Lister Hill at the next session of Congress in January 1965. The Surgeon General announced his approval of a new organizational plan for the Library, including two new divisions in the extramural program area: The Publications and Translations Division, and the Research and Training Division. Dr. Terry also read a resolution by the National Advisory Health Council in favor of broad programs in support of medical libraries in the United States. The Board discussed a proposal by Dr. Stafford Warren for a national library of science system and heard reports on the status of the Library's publication program, specifically on the printing and distribution of Index Medicus and Cumulated Index Medicus, and on plans for the decentralization of MEDLARS.

The agenda for the March meeting included reports on the Library's plan for automating the catalog, the use of the Library for support of scholarly research, the NLM-National Bureau of Standards study on graphic image storage and retrieval, the Drug Literature Program, MEDLARS development, and the Abridged Index Medicus. Dr. Saul Jarcho presented the Library with a 17th century medical text from his private collection for inclusion in the History of Medicine collection. And a historical exhibit depicting the evolution of the Library under the Department of the Army and the Public Health Service was turned over to the Library by Brig. Gen. Conn L. Millburn, Jr., Deputy Surgeon General of the Army. The exhibit was one of several items acquired by the Library with funds resulting from the Gillmore bequest.

At its June meeting, the Board heard and discussed reports on a proposal for evaluation of MEDLARS, on site visits for MEDLARS decentralization, and on utilization of MEDLARS tapes. On behalf of the Surgeon General, PHS, and the Secretary of Health, Education, and Welfare, the Director presented certificates of appreciation to Dr. Norman Q. Brill for his service as a member of the Board and as Chairman, and to Dr. Saul Jarcho for his contributions as a member during the past four years. The retiring Chairman, Dr. Brill, transferred the gavel to his successor, Dr. William N. Hubbard, Jr.

MEDICAL LIBRARY ASSISTANCE ACT OF 1965

In December, 1964, the President's Commission on Heart Disease, Cancer and Stroke submitted its report. Included were recommendations for broadly conceived legislation to authorize the National Library of Medicine to assist libraries through a program of grants and contracts to improve medical library services in the United States--including facilities, resources, training of personnel, secondary publications, and library and communications research.

On January 19, 1965, the Medical Library Assistance Act (S. 597, H. R. 3142) was introduced in Congress by Senator Lister Hill and Representative Oren Harris. Representative John E. Fogarty introduced an identical bill (H. R. 6001) on March 19, 1965.

This legislation received the strong support of the Board of Regents of the National Library of Medicine. On June 14, 1965, the Subcommittee on Health of the Senate Committee on Labor and Public Welfare, under the Chairmanship of Senator Hill, conducted hearings on S. 597. Hearings before the Interstate and Foreign Commerce Committee of the House were expected to be held early in Fiscal Year 1966.

NATIONAL PLANNING

During the course of the year, there was increasing concern in the White House with information transfer problems in the sciences and technologies. As an institution accepting responsibilities for bibliographic control in the health sciences, and as the operator of MEDLARS, the National Library of Medicine was indirectly, and in some cases directly, involved in multiple studies and proposals.

Principal areas of involvement were four: The Warren proposal, advanced by the President's Special Assistant for Mental Retardation, Dr. Stafford L. Warren, The Committee on Scientific and Technical Information of the Federal Council on Science and Technology, chaired by Mr. William Knox, the Panel on Toxicologic Information of the President's Science Advisory Committee, chaired by Dr. Phillip Handler, and The Federal Library Committee.

WARREN REPORT

In October 1964, Dr. Stafford L. Warren of the President's Commission on Mental Retardation, issued a report calling for the development of a university-based national system of libraries and information centers utilizing MEDLARS as a prototype information analysis and control system. Dr. Warren's proposals were presented at a number of meetings and stimulated great public interest. They drew attention to the potential contribution of university library systems, to the National Library of Medicine as originator of the MEDLARS system, and to the need for further planning at the national level.

COSATI

Dr. Edward W. Dempsey and Dr. William H. Stewart, Special Assistants to the Secretary, HEW, for Health and Medical Affairs, represented the DHEW on COSATI. Dr. F. Ellis Kelsey, Special Assistant to the Surgeon General for Science Information, served as alternate.

The Director and members of the Library staff were asked to serve on COSATI panels, task forces, working groups, and subcommittees, which covered: (1) Scientific and technical journal literature (Dr. Cummings,

Director); (2) Operational techniques and systems (Mr. Charles J. Austin, Chief, Data Processing Division); (3) Vocabulary compatibility (Dr. Peter Olch, Head, MeSH Group); (4) Translations in social sciences (Miss Mary Corning, Chief, Publications and Translations Division); and (5) National inventory of Serials (Mr. Sam Lazerow, Chief, Technical Services Division).

FEDERAL LIBRARY COMMITTEE

In response to the "need for cooperation and concerted action among Federal libraries," a Federal Library Committee was established in March 1965. Its permanent members are the Librarian of Congress, the Directors of the National Library of Medicine and the National Agricultural Library, and a librarian representative of each of the Executive Departments.

Members of the NLM staff were appointed to five of the Committee's six task forces, as follows: (1) Automation - Paul C. Redmer, Deputy Chief, Data Processing Division; (2) Acquisition of Library Materials and Correlation of Federal Library Resources - Louis S. Gerber, M. D., Technical Services Division; (3) Mission of the Federal Library and Standards for Federal Library Service - (Chairman) Scott Adams, Deputy Director; (4) Procurement Procedures in Federal Libraries - (Chairman) Samuel Lazerow, Chief, Technical Services Division; and (5) Interlibrary Loan Arrangements for Federal Libraries - David A. Kronick, Ph.D., Chief, Reference Services Division.

LIAISON WITH THE SURGEON GENERAL

The Library enjoyed consistent support by the immediate Office of the Surgeon General during the course of the year. The Director (in his absence, the Deputy Director or Associate Director for Extramural Programs) attended regularly the Surgeon General's staff meetings, and was encouraged to bring Library problems to the direct notice of the Surgeon General and his immediate staff.

COOPERATION WITH OTHER AGENCIES

Agency for International Development

In May, 1964, the Library entered into a participating agencies service agreement with the Agency for International Development. Under the terms of this agreement AID undertook to make positions and funds available so that the Library might develop its services supportive of AID health activities in developing countries.

Veterans Administration

The Library entered into a formal agreement with the Veterans Administration for the purpose of providing VA an opportunity for testing demand search services to VA hospitals. A team of three individuals headed by Dr. Charles Chapple were trained in indexing, search formulation and systems operations, and as a special unit provided search services to VA personnel.

National Bureau of Standards

By agreement between the National Library of Medicine and the National Bureau of Standards, an NLM-NBS project team began a study aimed primarily at improving the graphic image quality of the Library's photoduplication output and increasing the capacity of the present operation. The joint task force was headed by Mr. Edward J. Forbes and Mr. Thomas C. Bagg, systems engineers from the Information Technology Division, NBS.

RELATIONS WITH THE MEDICAL LIBRARY ASSOCIATION

In order to provide for improved liaison between the Medical Library Association and the National Library of Medicine, the MLA established a MLA/NLM Liaison Committee at its 1964 annual meeting. This Committee held two meetings during the year, reviewing NLM program plans and discussing problems of common professional interest. The first was on January 28, 1965 in Bethesda, and the second on May 29, 1965 in Philadelphia. Mr. Alfred Brandon, Librarian of the Welch Medical Library, Johns Hopkins University, served as Chairman.

During the course of the year, three members of the Library's staff served on committees of the MLA. Scott Adams, Deputy Director, was named Chairman, Awards Committee. Mrs. Maxine K. Hanke, Special Assistant to the Associate Director for Extramural Programs, became Chairman, Subcommittee on Internships. Dr. John B. Blake, Chief, History of Medicine Division, was appointed Editor, Editorial Committee on Revision of "Bibliography of Reference Works and Histories, Handbook of Medical Library Practice."

INTERNATIONAL COOPERATION

Foreign MEDLARS Search Centers

The Library began to develop cooperative arrangements with foreign institutions which had expressed an interest in serving as MEDLARS Search Centers. The first institutions selected for this activity were the National Lending Library for Science and Technology of Great Britain, and the Karolinska Institutet in Stockholm, Sweden. As a first step, personnel from these institutions came to the Library for study of MEDLARS procedures for indexing, searching, and data processing. Dr. Kjell Samuelson of the Computer Division, Department of Medical Physics of the Karolinska Institutet, and Dr. A. J. Harley, Senior

Scientific Officer, National Lending Library and Miss Elizabeth Barraclough, Senior Computer Programmer, Computing Laboratory, University of Newcastle-upon-Tyne, were the first trainees at the National Library of Medicine.

PAHO

In January 1965 NLM hosted a meeting of people concerned with problems of medical education, biomedical research, and international health, as these related to Latin America. The purpose of this meeting was to consider the establishment of a Latin American Regional Medical Library Center. Participants represented the Pan American Health Organization, Rockefeller Foundation, U. S. Book Exchange, Department of State, Agency for International Development, and the NLM. Subsequently, the Pan American Health Organization requested the Library to provide two consultants to assess the situation in Latin America. Dr. Mortimer Taube, President of Documentation, Inc., and Dr. David Kronick, Chief of the Reference Services Division, NLM visited institutions in Brazil, Uruguay, Argentina, Chile, Colombia, and Venezuela. A formal proposal for the development of a Regional Medical Library Center for Latin America was prepared for a meeting of the Pan American Health Organization Advisory Committee on Medical Research in June 1965. The proposal calls for the establishment of a regional center which could provide resources necessary to support biomedical research. This was formally accepted by the PAHO and is presently under consideration by private foundations.

PARTICIPATION IN PROFESSIONAL MEETINGS

During the year, the Director and Deputy Director participated in a number of conferences, meetings, and special events.

Dr. Cummings - American Library Association annual meeting
American Association of Medical Writers
Conference on Electronic Information Handling - Dr. Cummings discussed NLM MEDLARS operating experiences
Conference on Computerization for Cardio-vascular Research - Dr. Cummings delivered a paper on the application of MEDLARS to research problems
Assn. of American Medical Colleges
Vanderbilt University School of Medicine's dedication - Dr. Cummings was principal speaker
Interuniversity Communications Council
American Hospital Association's Committee on Library Services for Hospitals
International Symposium on National Policies for Biomedical Research
Medical Library Association - Dr. Cummings presided at the session on "Local, Regional, and National Medical Library Cooperation"
Harvard Medical School, Francis A. Countway Library of Medicine dedication - Dr. Cummings was among the principal speakers

Mr. Adams - American Library Association - Mr. Adams presented a paper "The Scientific Revolution and the Research Library

2nd Annual Colloquium on Information Retrieval -
Mr. Adams presented a paper "MEDLARS - Progress and Prospects"

Special Libraries Association - Mr. Adams was a panelist at the "Library Cooperation: Panacea or Pitfall?" general session and moderated a panel on "Cooperation - One Way Street or Thoroughfare?"

National Federation of Science Abstracting and Indexing Services

SCHOLARS AND SCIENTISTS AT NLM

During the year, the Library afforded study facilities to six visiting scholars and scientists at work on long-term research projects:

Dr. Robert Pollitzer, internationally known for his work on plague; Dr. Stanhope-Bayne-Jones, Retired Brigadier General, U. S. Army Reserve Medical Corps and Chairman of the Advisory Editorial Board on the History of Preventive Medicine in the U. S. Army in World War II, at work on Volume I of the History; Mrs. Bess Furman Armstrong, former Assistant to the Secretaries (for Public Affairs) Ribicoff and Celebrezze, writing a popular history of the Public Health Service; Dr. James P. Leake, retired PHS Medical Director, currently revising several works on small pox and vaccination; Dr. Fred L. Soper, of the PHS Office of International Health and former Director of the Pan American Sanitary Bureau, beginning a two-year study on the "Evolution of International Health and the Genesis of Disease Eradication"; and Dr. Robert B. Livingston, of the Division of Research Facilities and Resources, working on a new edition of Fulton's Physiology of the Nervous System.

JOHN SHAW BILLINGS CENTENNIAL

On June 17, 1965, the National Library of Medicine celebrated the 100th anniversary of Dr. John Shaw Billings' advent as head of the Library of the Surgeon General's Office (U. S. Army), forerunner of the NLM. Participating in the Centennial observance were representatives from the White House and the Congress, together with other distinguished guests from the biomedical science, education, and library communities.

In a private ceremony preceding the Centennial, Colonel Robert Fletcher presented to the Library the Honorary Gold Medal of the Royal College of Surgeons of England, which had been awarded in 1910 to his father, Dr. Robert Fletcher. Dr. Fletcher served for many years as Principal Assistant Librarian of the Army Medical Library and as an editor of Index Medicus and the Index-Catalogue. Colonel Fletcher also gave the Library a volume of collected reprints of Dr. Fletcher's essays.

The afternoon session of the Centennial, presided over by Dr. Norman Q. Brill, Chairman of the Board of Regents, was held in the Reading Room. After a welcome by Dr. Martin M. Cummings, Director of the Library, Dr. Luther L. Terry, Surgeon General of the Public Health Service, introduced Representative John E. Fogarty of Rhode Island, who spoke on "Medical Libraries and Medical Research." Undersecretary Wilbur J. Cohen introduced Representative Leo W. O'Brien of New York, who delivered an address on "Medical Libraries and Medical Education," on behalf of Representative Oren Harris of Arkansas, who was unable to attend. Following an introduction by the Secretary of Health, Education, and Welfare, Anthony J. Celebrezze, Senator Lister Hill of Alabama reviewed "The Medical Library Crisis--Billings to MEDLARS."

Guests later toured the Library and viewed an exhibit prepared for the Centennial. The exhibit consisted of Billings memorabilia ranging from photographs, personal letters, clippings, and documents to the early Hollerith tabulation equipment developed at Billings' suggestion.

The evening program, held in the Library's new Auditorium adjacent to the Billings Study, featured three historical papers on Dr. Billings' life and career. Speakers were Dr. Jean A. Curran, Professor Emeritus of the History of Medicine, State University of New York; Bess Furman, former Washington newspaperwoman and author; and Dr. Frank B. Rogers, Librarian of the Denison Memorial Library, University of Colorado Medical Center, and former Director of NLM.

GILLMORE BEQUEST

With funds resulting from the Gillmore Bequest, the Library acquired a new exhibit, "The Evolution of the National Library of Medicine"; a number of rare books, including the "Liber Amicorum" by the 16th century scientist, Konrad Gesner; portraits of two former Directors, Dr. Frank Bradway Rogers and Dr. Joseph Hamilton McNinch; and furnishings for the John Shaw Billings Study.

The bequest was made to the Army Medical Library in 1937 by the late Mrs. Emma Wheat Gillmore in memory of her husband, Dr. Robert Tracy Gillmore. The trust, administered by the Department of the Army, consisted of cash, stocks, bonds, and interest amounting to more than \$24,000. The funds were expended according to a plan approved by the Library's Board of Regents.

HORACE HART AWARD

Dr. Frank B. Rogers, former Director of the Library, received the 1964 Horace Hart Award of the Education Council of the Graphic Arts Industry, Inc., for public service in advancing education, training, and technological improvements affecting the graphic arts industry. Dr. Rogers was cited for his contributions to the development of GRACE (Graphic Arts Composing Equipment), a component of the Library's computerized Medical Literature Analysis and Retrieval System.

EXHIBITS

The Library inaugurated a new program of exhibits. The first of these, on "The Historical Background of Blood Transfusions," was displayed in the Library in conjunction with a symposium co-sponsored by the Public Health Service and the National Academy of Sciences-National Research Council as part of the Medical Education for National Defense (MEND) program.

"The National Library of Medicine," a large exhibit with a self-contained project featured a 12-minute film and other visual materials depicting the Library's programs and services. This exhibit was shown at the 64th Annual Meeting of the Medical Library Association in Philadelphia. Subsequently, it was displayed in the Library and used at other meetings.

Other exhibits included the "Evolution of the National Library of Medicine," a four-panel diorama presented by the Surgeon General of the Army and installed in the Lobby, and an exhibit of materials related to the life and career of Dr. John Shaw Billings, in connection with the Billings Centennial program.

LIBRARY TOURS AND VISITORS

Responsibility for Library tours, touring, and reception of visitors, a steadily increasing workload, was transferred to Administrative Services in August 1964. Near the end of the year, it was decided these functions would be permanently transferred to the Office of the Assistant to the Director when an additional position becomes available in the appropriation for FY 1966.

NEW YORK WORLD'S FAIR

Recent key publications of the Library were among the historic documents and artifacts of the past 25 years which were selected for burial in Time Capsule II on the site of the 1964-65 New York World's Fair. The NLM publications were microfilmed for inclusion in a 50,000 page, 20 million-word encyclopedic message on progress in the sciences and world affairs since 1938 when the original Time Capsule was interred.

The publications included "The MEDLARS Story" and fact sheets and press materials on MEDLARS and GRACE, plus the August 1964 Index Medicus, first issue produced by GRACE, and a "Bibliography on Thalidomide." Time Capsule II was to be buried at the conclusion of the World's Fair in October, hopefully to be unearthed by archeologists 5000 years in the future.

FINANCIAL RESOURCES

The FY 1965 Labor-DHEW appropriation bill was signed on September 19, 1965. The bill provided \$3,892,000 for the appropriation National Library of Medicine, all of which was subsequently allotted to the Library. The Library also received foreign currency allotments from the Scientific Activities Overseas appropriations, and an allowance for repairs and improvements to the Library building from the Buildings and Facilities appropriation. In March, a supplemental appropriation bill provided an additional \$66,000 for the National Library of Medicine to defray approximately 80% of additional costs associated with a Federal pay raise during the year. The Library also received \$28,991 in reimbursement for goods and services provided to other government agencies.

A new financial resource was developed late in the year as a result of the agreement with the Agency for International Development. This agreement provided a total of \$22,500 for operations during the last quarter of FY 1965.

The Library's financial resources are shown in tabular form in the Financial Resources appendix to this report.

FINANCIAL MANAGEMENT

In November, the Library implemented a new system of managing the current year budget which was designed to provide better control over limited resources, encourage more participation in budget execution at the program level, identify and focus attention on specific budget problems, and provide a more objective framework for making budget decisions.

Operating allotments were made on an object class basis to all operating programs of the Library for all objects of cost except salaries and concomitant benefits. These personnel costs were controlled on a consolidated basis to provide greater flexibility and simplify record keeping.

The new system included a monthly report on the current authorization of each program, the cumulative net obligations against that authorization, and amounts remaining available by objective class. These authorizations were also summarized and compared with total anticipated resources, which, like the individual program authorizations, could change from month to month. This new report made it possible to calculate the impact of shifts in program emphasis very quickly and permitted the Library to make optimum use of available funds at the end of the year.

Total obligations for the year from all accounts are shown in the Financial Section of the Appendixes.

CONTRACTUAL ACTIVITIES

Activities of the Library carried out through contracts, and services provided other groups under various agreements, exceeded substantially in FY 1965 the volume of prior years. By the end of the year, 34 contracts and/or service agreements were in effect or under negotiation.

The National Institutes of Health Supply Management Branch which encompasses both the Research Contracts Section and the Procurement Section, provided contracting officer services to the Library. Under this arrangement, the expertise of the entire Supply Management Branch and the Contract Finance and Analysis Section was available to provide services to the Library.

OFFICE SERVICES

Major items of "Repairs and Improvements" were made during Fiscal Year 1965 as follows:

1. The North end of "C" level was converted to office space. Renovations consisted of installing new partitions, new lights, and acoustical ceiling tile. The space has been allotted to Supply, Binding, and the National Institute of Child Health and Human Development.
2. With funds from the Gillmore bequest, Room A-43 was converted to the John Shaw Billings Study and Auditorium, with a seating capacity of over 160. Auxiliary air conditioning, new lights, painting, etc., were included in the renovation.
3. A contract was awarded for the installation of exterior flood lights on the roof of the Library and fluorescent lights at ground level extending from the loading dock around the front of the building to approximately three quarter's of the length of the South side of the building.
4. A contract was awarded for the installation of a lighted "National Library of Medicine" sign to be located at the intersection of Center Drive and Rockville Pike

MANPOWER CONTROL POLICIES

Executive Branch manpower control policies created unique new operating problems for the Library. Contrary to the accepted practices of previous years, the Library was directed to operate within the limits of its "Detail of Personnel Compensation" as reflected in the President's Budget for FY 1965 (with adjustments made by the Congress in action on the appropriation bills). The Library was faced with limitations on 1) average salary of General Schedule employees, 2) number of positions in Grades GS-14 and above (including 208g positions), and 3) number of employees on duty at the end of the year in permanent positions and in other positions.

The imposition of these policies during a period of expansion found the Library with an average GS salary in excess of the target figure, and no positions vacant at Grades GS-14 and above. Many planned personnel actions had to be delayed for long periods of time and some indefinitely. Morale of the staff was adversely affected by these controls; however, few losses resulted from delays in processing personnel actions.

The new policies would continue to affect operations in FY 1966, since that budget had been formulated prior to the realization of the policies' full impact, and there was no opportunity to make needed adjustments.

PERSONNEL

During Fiscal Year 1965 the following staff appointments were made in the Library:

Charles L. Bernier, Ph.D., Science Communication Specialist
Hugo A. Borresen, Ph.D., Training Specialist, Bibliographic Services Division
Raymond D. Clements, Ph.D., History of Medicine Division
Robert S. Cohen, Exhibits Director
Joseph B. Foley, Scientific Grants Assistant, Publications and Translations Division
Louis S. Gerber, M. D., Coordinator for the Development of the Collections
Charlotte Kenton, Head, Search Unit, Bibliographic Services Division
Jerome N. Kerkhof, Personnel Officer
David A. Kronick, Ph.D., Chief, Reference Services Division
Paul C. Redmer, Deputy Chief, Data Processing Division
Robert M. Wilson, Public Information Officer
Theodore Wolfe, Head, Preservation Section, Reference Services Division

Staffing

The fiscal year began with 257 employees on duty. On June 30, 1965, the staff numbered 269. During the year the Library gained 74 employees and lost 62, compared with 65 and 48, respectively, the previous year.

Personnel Actions

There were 101 position descriptions prepared and approved during the year. Fifty-one were for new jobs, while the remainder replaced descriptions for jobs already established. Seventy promotions were effected compared with 65 the previous year.

Training

One hundred and twenty-seven employees participated in training programs sponsored by the Public Health Service including orientation programs, training in telephone techniques and a film for supervisory personnel. Five employees took courses at non-government institutions. The sum of these training programs required an investment of 165 man-days.

Civil Service Examination

The Civil Service Commission announced reopening of the Clerk examination after a lapse of several years. The examination announcement also provided that Library Assistants could be certified from the Clerk registers.

As a result the Library will be able to offer permanent appointments to candidates for positions in these occupations. In addition, NLM employees in these categories now holding TAPER appointments (temporary appointment pending establishment of the register) will have the opportunity to compete for permanent appointments.

Quality Increases

An Additional within grade step-increase for superior performance was awarded to eleven employees. They ranged in grade from GS-3 to GS-14.

Awards

Cash awards for adopted suggestions were presented to:

Mrs. Sonya Datlow (OD)	\$15.00
Mrs. Pearl Cardwell (RSD)	\$25.00
Mr. James Keeling (RSD)	\$15.00
Mrs. Judith Jeweler (TSD)	\$15.00

Awards for superior work performance were presented to:

Mrs. Louise Goins (RSD)	\$147.00
Mr. Thomas Cassidy (RSD)	\$260.00

Awards for ten, twenty, and thirty years of service with the Federal government were given to 15 Library employees on April 29.

The two thirty year awards were given to Mr. Ray Grim, Executive Officer and Mrs. Sarah Gibson, Clerk, both in the Office of the Director.

Summer Employment

For the summer of 1965 ten students were appointed to temporary summer jobs at the Library. Included were two appointed under the Commissioned Officers' Student Trainee Program, and two appointed under the President's Youth Trainee Program. The remainder were Civil Service Clerk-typists and Clerk-stenographers.

Promotion Plans

The Public Health Service issued several new merit promotion plans which affect NLM employees.

The new plans, covering clerical, supervisory clerical, sub-professional, and secretarial positions GS-6 and above, provide for a PHS-wide area of consideration for these positions (except those at

NIH and Library Assistants at NLM).

Mr. Ray W. Grim, who had been the Executive Officer since November 1956, transferred in May 1965 to a similar position in the Office of Education. This position remained vacant at year's end.

Miss M. Ruth MacDonald, Administrative Librarian, retired in May, 1965. She had been a leader in the Library since 1945, serving as Chief, Catalog Division for approximately 15 years, and more recently as Special Assistant to the Director, and as Librarian Assistant to the Executive Officer.

Mr. Herbert Smith, Mail Clerk, retired after 40 years as a Federal Government employee, most of which had been in the Mail Room of the Library.

PROGRAM DEVELOPMENT

During the course of the year two important staff functions relating to program planning and development were associated with the Office of the Director. These were the development of MeSH, undertaken by the Medical Subject Heading Group and planning for the new responsibilities assigned the Library in the area of drug information conducted by the Drug Literature Program. Reports on these staff functions follow.

DRUG LITERATURE PROGRAM

The President's Budget for Fiscal Year 1966 carries provision for establishment within the Department of Health, Education, and Welfare of a coordinated system for collection, organization, and dissemination of information on drugs. Designated recipients of funds are the Food and Drug Administration, the National Institutes of Health, and the National Library of Medicine. NLM would receive \$1,000,000 for division between the Intramural and Extramural Programs to support more effective collection, processing, and dissemination of the published literature.

In the middle of the year planning for internal operation of the Drug Literature Program was begun on several fronts. To date, it has included discussions with organizations, both within and outside the Government, which are concerned with drug information. Considerable time has also been spent on internal organizational and technical matters, and a general functional outline has been prepared.

Functions of the Drug Literature Program

Collection of All Published Literature on Drugs. Types of drug literature which have not been procured in the Library's normal collection program have been identified. In addition, a study of the availability of drug publications in the Library has been planned in order to determine what additional copies of journals should be acquired in order to facilitate indexing and searching and to respond promptly to requests for original papers on drugs.

Selection of materials for the new Drug Literature Program will involve some deviation from the Library's past collection policy. Card services are being acquired and punch cards, computer tapes, and other non-book materials have been purchased or are to be ordered.

Expansion of Coverage of Drug Publications. It has already been demonstrated that certain types of information not included in MEDLARS are needed for bibliographies for the DLP. Certain journals which contain important drug information and are not presently covered in Index Medicus have been identified and a more complete listing is planned.

Greater Precision in Chemical Indexing. Considerable effort has gone into planning for an Auxiliary Chemical File. Since chemical terms are in effect defined by their structure, it is not necessary to process them through the regular Medical Subject Headings (MeSH) procedures in order to attach citations to them and to identify synonyms. The Library hopes to work with Chemical Abstracts or another existing system to establish a separate computer file which would contain the structures for drugs, their synonyms, a registry number, and a reference to the articles in which they are discussed. This chemical information would not go into the body of Index Medicus, although the citation to the paper would appear there under other headings as it presently does. The chemical listing would insure retrieval of all publications on a drug, whether or not it had been named in MeSH, and would also make possible a separate publication on new drugs.

Greater Precision in Non-Chemical Drug Indexing. At least two areas for improvement besides the Auxiliary Chemical File have been identified. There is a need for more detailed indexing of pharmacological action and of the manner of administration. Conversations have been held with representatives of the Food and Drug Administration, the American Medical Association, and the American Society of Hospital

Pharmacists as to the best way of organizing our drug terms by their pharmacological action. The Library will endeavor to base its pharmacological action terms on the Hospital Formulary classification insofar as practicable.

There is also a need for relating index terms to one another. Particularly, the tags for toxicology should be applied to the individual drug rather than to the whole article only. In collaboration with the MeSH group, plans have been made for use of subheadings to bring out this relation.

Expansion of Reference and Search Service to the Biomedical Community. It is the objective of the Program to provide back-up for other reference and search services in answering questions for which their groups have been directed toward the type of question which needs to be answered and about a dozen sample questions have been run through MEDLARS. Searches will not be limited to MEDLARS but will include other services to which the Library subscribes, as well as the traditional reference sources. Considerable thought has also been given to continuing bibliographies, such as lists of papers on individual drugs or important drug groups.

Extramural Program Function. The Extramural Program of the Library will have responsibility for support of publications and translations on drugs and also for research and training of personnel in communication of information on drugs to the biomedical community. Their initial planning has been closely integrated with that of the Intramural Drug Literature Program, and Extramural Program staff members have participated in meetings with potential user groups.

Communication and Public Relations

During the past year those involved with planning the Drug Literature Program held three meetings with FDA personnel, one with staff of the Bureau of Environmental Health, two with the Chemical Abstracts Service, one two-day meeting with the American Society of Hospital Pharmacists, and two informal meetings with American Medical Association representatives. Staff also participated in three meetings of the National Academy of Sciences-National Research Council Subcommittee on Modern Methods of Handling Chemical Information. At the March meeting of this group, NLM chemical problems were discussed. The meetings of the ASHP and the FDA were particularly fruitful in setting forth types of information which these user groups would require. In return, user groups have made staff and materials available as resources for NLM and have expressed a willingness to assist the Library in its program in other ways. In addition, presentations on the DLP were made at the Board of Regents meeting on March 18, and to a Technical Staff Meeting on April 23.

Organization

Major effort has been devoted to staffing DLP. It is planned to start with a staff of ten professional and five clerical people. Though hiring for the Program could not be done until money is appropriated, the recruitment effort has been directed toward locating individuals with broad subject specialization in the fields of pharmacology, toxicology, pharmacy, clinical investigations, biometrics, biochemistry, and medicinal chemistry.

MEDICAL SUBJECT HEADINGS

Introduction

The newly formed MeSH staff assumed its responsibilities at the start of the fiscal year. This staff consisted of Dr. Peter D. Olch, Special Assistant to the Director, who had final responsibility for the updating and modification of MeSH; Miss Adriana McCann, Senior Subject Heading Specialist, who was organizational chief of the staff; and Miss Alice Laskey, Subject Heading Specialist. In a matter of months the MeSH staff acquired the services of Mrs. Grace T. Jenkins, Medical Subject Heading Assistant, whose primary responsibility was the inputting of MeSH additions and changes into MEDLARS via the Data Processing Division, as well as the year-round file maintenance. In September Mrs. Gertrude Rosenberg joined the MeSH staff as clerk-typist.

The above group proceeded with and completed the January 1965 MeSH revision and completed the initial development of Medical Subject Headings for the January 1966 revision of MeSH in FY 1965. Toward the close of FY 1965 the MeSH staff had the able assistance of Mrs. Sally Miles on assignment from the Administrative Services Section, and Dr. Louis S. Gerber, on assignment from the Technical Services Division.

General Progress

With the growth of the MeSH staff during the fiscal year there was an increase in efficiency with the increased opportunity for reasonable delegation of responsibility for the varied intellectual and technical chores inherent in the development of a biomedical subject heading list. It was possible for the first time to assign initial responsibility for subject heading development based on professional and technical competence. It was also possible to develop more active liaison with groups in the biomedical community for assistance in subject heading development. A number of improvements were initiated by the staff in its internal record-handling, expediting the handling of journals containing provisional headings, services provided the indexing and searching staffs of the Bibliographic Services Division, etc. MeSH statistics are presented in Table 1 and 2 at the end of this report.

Late in the fiscal year the MeSH group, at the suggestion of the Director, initiated a series of indexing seminars in which all individuals within the Library who dealt in any way with indexing policy, production, or terminology participated. All attendees indexed an article prior to the meeting and then discussed it openly at the seminar. The limited number of seminars held thus far have been profitable for all attendees and have illustrated the problems associated with indexing and subject heading development.

Provisional Headings

At the close of the FY 1964 there were approximately 600 provisional subject headings available for indexing and searching. By the close of FY 1965 this list had grown to nearly 900 provisional headings in spite of the fact that the January 1965 edition of MeSH converted some 151 provisional headings to main subject headings. Another deterrent to the increasing size of the provisional heading list is the change in philosophy in handling these headings. As the proposed subject headings are forwarded to the MeSH group by the indexing staff they are reviewed by the entire MeSH staff prior to being accepted or rejected. If accepted the term is defined, the published authority listed, and instructions given as to what MeSH headings to use to index this provisional heading concept. Before being input into MEDLARS the provisional heading, worked up as described, is reviewed by the senior indexing staff and search staff for any possible modification. Approximately one-third of the proposed provisional headings submitted by the indexing staff are finally accepted as provisional headings in the system.

The increasing size of the provisional heading list is a cause for concern in that it is a second source of subject headings for which the indexer must be responsible. Two steps are being taken to help alleviate this problem. The Data Processing Division has provided a GRACE-produced common alphabetic list of MeSH terms and provisional headings which can be updated at reasonable intervals for use by the indexing and searching staffs. At the close of FY 1965 the MeSH group was attempting to develop a useful typed list of provisional headings that would include the definition, indexing instructions, and date of entry of the term in the system. This would be a desk copy for indexers and searchers alike.

At the time of the 1966 MeSH revision a number of infrequently used provisional headings were deleted from the system.

MeSH Format

The format of the published Medical Subject Headings List for the January 1965 and proposed January 1966 issues is similar to previous years. There continues to be concern in the MeSH group for an improved format. Such a study of a basic change in format of the printed MeSH is expected to be incorporated in a proposed study by the Data Processing Division. Of basic concern to all parties is the somewhat awkward handling

required for proper use of MeSH which entails continual referral back and forth from the alphabetic section to the categorized lists. An improvement but not a solution is proposed and outlined below.

Cross References

The Medical Subject Headings List has traditionally relied upon the display of subject headings within the categorized lists to substitute for the vast majority of "see also specific" cross references. There have been numerous requests from the indexing staff within the Library and from users outside NLM to strengthen the cross reference structure of the printed MeSH. Through joint consideration of the problem, representatives of the MeSH staff, Indexing staff, and the Data Processing Division developed a plan to bolster the cross reference structure in FY 1966.

As tree structures are developed and input into MEDLARS, new and more extensive cross references are to be placed in the alphabetic section of the MeSH list. At this time the present limited number of "see also specific" cross references will be greatly expanded and combined with the present "see also related" cross references as a single group of "see also" cross references. There will then be three types of cross references: "see", "see also", and "see under". It is hoped that this more extensively cross-referenced alphabetic section of MeSH will be available for the user in January 1967.

Tree Structures

An integral part of MEDLARS is the provision for tree structures in the computer to facilitate structured searches of a hierarchy of subject headings within a subcategory. In FY 1965, tree structures were updated and modified in subcategories A1, A6, B1, B2, B4, and B5; and new tree structures were constructed in subcategories A2, A3, A4, A5, A7, A8, A9, A10, A11, A12, A13, B3, and B6. (Tree structures are therefore available for inputting for all of the A and B categories.) Preliminary tree structures which await review by the Search Section of the Bibliographic Services Division were completed in D1, D2, D3, D4, D5, D6, D7, and D8 (all of D Category), and E1, E2, E3, E4, and E5 (all of E Category) by July 1, 1965. A major effort will be made by the MeSH staff in FY 1966 to develop tree structures for the remaining categories and to input all the tree structures into MEDLARS while concurrently bolstering the cross reference structure of MeSH by inputting numerous new cross references.

Subheadings

At the close of FY 1965 the decision was made to attack the problem of large volume headings in Index Medicus with the use of subheadings. An attempt to break up large volume concepts in Index Medicus with pre-coordinated headings had not been successful in FY 1964 and FY 1965. It was therefore decided by the NLM staff, after thorough consideration, to reinstate subheadings. Mindful of a current MEDLARS limitation of 62 sub-

headings, the MeSH indexing, searching, and cataloging staffs jointly developed a preliminary list of 47 proposed subheadings in June 1965. The subheadings are not to be utilized "across the board" but are to be assigned for use by categories in order to cut down the number of inappropriate main heading-subheading combinations. It is hoped that additional programming by the Data Processing Division will result in a much greater capacity for subheadings within the next couple of years. (Current limit is 62 subheadings for all categories; proposed limit is approximately 50 unique subheadings per category.)

MeSH Liaison

FY 1965 was marked by active liaison with professional groups within the biomedical community to seek assistance in the development of subject headings in specialized areas. The best example of the results of MeSH liaison with a segment of the biomedical community is a publication whose groundwork was begun in FY 1964 by Miss Winifred Sewell, but which came to fruition in FY 1965. A Thesaurus of Rheumatology, published as a supplement to the February 1965 of Arthritis and Metabolism was the result of a combined effort by NLM staff, Miss Mary Jane Ruhl of the American Rheumatism Association, and Dr. Leon Sokoloff of the National Institute of Arthritis and Metabolic Diseases. In this thesaurus, a highly specialized vocabulary is listed with reference to preferred terms, see also cross references, and see under MeSH terms. The thesaurus thus provides guidance for the NLM indexing staff, the rheumatologist user of Index Medicus, and the NLM searching staff. Development of this thesaurus paved the way for one of the superior recurring bibliographies, the Index to Rheumatology.

Other MeSH liaison initiated in FY 1965 included:

1) A series of meetings at NLM with four members of the Epidemiology Section of the American Public Health Association for the development of a critical list of subject headings in the fields of epidemiology and statistics. At the close of FY 1965, a tentative list of 15 subject headings beginning January 1966, and after further "in use" evaluation, will become MeSH headings in January 1967.

2) Meetings with representatives of the Journal of Medical Education and the American Journal of Nursing resulted in the development of needed subject headings in these two fields, many of which were incorporated in the January 1966 revision of MeSH. (Medical Education 18; Nursing 17.)

3) Through meetings with representatives of the Neurological Diseases Information Centers supported by the National Institute of Neurological Diseases and Blindness NLM has been in close touch with specialized groups who are attempting to develop their own detailed and highly specific lists of subject headings compatible with the NLM Medical Subject Headings List. For example, the Brain Research Institute at the University of

California at Los Angeles, the Parkinson's Disease Information Center at Columbia University, and the Human Communications Project at Johns Hopkins are working on a common list of subject headings. This common list will then be related to MeSH in the manner of A Thesaurus of Rheumatology.

4) Several meetings with the National Academy of Sciences-National Research Council have resulted in an agreement (currently being formulated and formalized) to have a panel of social scientists (psychologists, psychiatrists, sociologists, and anthropologists) review the Social Science subject headings in MeSH and assist the NLM staff in developing additional subject headings in this exceedingly difficult area. The formal proposal from NAS-NRC is expected in early FY 1966, and some resulting changes are expected in time for the January 1967 MeSH.

5) Late in FY 1965, in-house liaison with representatives of the proposed Drug Literature Program essentially replaced the discussions held with such varied groups as the Food and Drug Administration, the Department of Drugs of the American Medical Association, and Chemical Abstracts on matters pertaining to chemical and drug terminology. Other in-house liaison resulted in 22 new MeSH headings specifically introduced for the Cataloging Section of the Technical Services Division.

6) The active liaison with the American Dental Association begun in FY 1964 was continued as evidenced by the 176 new MeSH headings in Dentistry in the 1965 MeSH and the first GRACE-produced Index to Dental Literature, which appeared late in FY 1965.

Other meetings held with outside organizations on mutual subject heading problems included discussions with the National Agricultural Library, the Current Medical Terminology group of the American Medical Association, and the COSATI task force for vocabulary development.

TABLE 1

MeSH STATISTICS

	<u>FY 1964</u>	<u>FY 65</u>	<u>1965 Edition</u>	<u>1966 Edition</u>
MeSH Headings (new)	1,018	579	ca.439	
<u>MeSH Headings (new) by category</u>				
<u>CATEGORY</u>				
A	74	16		
B	9	36		
C	175	49		
D	165	143		
E	115	46		
F	25	22		
G	87	64		
H	15	18		
I	6	37		
J	2	5		
K	1	1		
L	3	10		
M	4	8		
	<u>681*</u>	<u>455*</u>		

* These totals are greater than the actual number of new headings as a new heading may appear in more than one category. These figures do show the ratio of new headings developed by category.

TABLE 2
MESH STATISTICS

	<u>FY64</u>	<u>FY65</u>	<u>1965 Edition</u>	<u>1966 Edition</u>
Provisional Headings at close of FY	609	878		
MeSH Headings derived from provisional headings			151 (20%)	243 (55%)
Main Headings deleted			46	80
Subheadings developed				ca. 47
MeSH transactions performed			ca. 3,300	

PUBLICATIONS MANAGEMENT

In August, 1964, responsibility for the administrative management of all Library publications was assigned to Administrative Services. The Section was given a charge to establish a central publications control and distribution unit responsible for printing quality control and physical control of Library publications. Until she retired on May 7, 1965, Miss M. Ruth MacDonalld headed the Section's activities in publication management.

Information was gathered to the extent possible from all divisions on the publications sponsored by them, including available and historical and current data on distribution practices and policies and on formal and informal mailing lists.

In order to establish basic policy relating to the exercise of the Library's publication and distribution mechanism, the Director appointed in October 1964 an ad hoc Publication Policy Committee to make recommendations to him covering 1) objectives of a Library publication program; 2) definition of responsibilities relating to the initiation, review, and approval of Library publications and their distribution.

Some of the more important publication management actions taken by Administrative Services include the following:

Post-printing Inspection -- All Library publications are held briefly after printing until several randomly selected copies have been reviewed by Administrative Services for printing quality control and approved for distribution.

Index Medicus Distribution --The Government Printing Office requested supplementary subsidization of the Index Medicus printing costs in calendar year 1964. A substantial printing increase in costs had been caused by the delay in the availability of GRACE and the resulting over-sized issues from January through July when the printer's copy was prepared through MEDLARS on the computer printer. A complete review of IM distribution policies was undertaken in an effort to find resources needed to pay the increased printing costs.

Two concurrent actions were decided upon as follows:

1. The Superintendent of Documents increased the subscription price for IM from \$26 (domestic) and \$32 (foreign) to \$40 and \$49, respectively, effective January 1, 1965.
2. The Library reduced the number of free and exchange subscriptions effective January 1, 1965 from 800 to 600, and requested reimbursement from the major Federal agency users.

Publications for New Medical School Libraries -- A small program was initiated to guarantee the availability in the future of some of the major NLM produced bibliographies to new medical schools. Copies of the CIM, NLM Catalog, and Index Catalogue have been wrapped and stored for this purpose.

CHAPTER TWO

EXTRAMURAL PROGRAMS

Office of Associate Director

With the introduction of S. 597 (Medical Library Assistance Act of 1965) in the Senate and H.R. 3142 in the House on January 19, a principal activity for the entire program staff this fiscal year has been the preparation of a series of reports on the status and needs of biomedical libraries.

The major portion of this effort was devoted to developing comprehensive background data accompanied by an analysis of the needs of all segments of the biomedical library complex in the United States. The studies present an in-depth review of the role of medical libraries as a component of the biomedical communication system. An overview of the present status with a summary of specific needs emphasizes the widely publicized and well documented needs of those libraries affiliated with Schools of Medicine, Dentistry, Nursing, Osteopathy, Public Health or in teaching hospitals. Particular deficiencies covered include: construction (new or renovation) of established medical libraries; lack of manpower and the related problem of training; collection and other resource type needs at both the local and regional level; research primarily directed toward improving bibliographic and physical (machine) access to the published literature. In the preparation of these numerous reports, willing assistance was received from many professional associations as well as several elements of the Federal government which enabled the staff to compile and analyze data on a nationwide basis with respect to the existing conditions and deficiencies in areas such as medical library manpower, facilities and resources. The reports would have been much less complete without the help received from: The Association of American Medical Colleges, American Medical Association, American Dental Association, American Council on Pharmaceutical Education, National League for Nursing, and the Social Security Administration. From within the Public Health Service, the Division of Dental Public Health and Resources, Division of Nursing, and the NIH, Office of Program Planning, made especially valuable contributions. Many of the reports containing detailed data and standards were revised and assembled to form "Legislative Background Material," a reference book covering all aspects of the pending legislation: statistical data; analysis of specific needs; and a summarization of accomplishments which could be anticipated with the support called for in S.597 and H.R. 3142. Briefings were held with representatives of the Department and the Surgeon General prior to the Senate Hearings on the bill, which occurred on June 14 and June 15.

In brief, the Act sets forth a program of assistance designed to correct the deficiencies of biomedical libraries. It includes support for the construction and renovation of medical libraries of all types, provision of resources for medical libraries, training of personnel, research, special fellowships for training and/or research, support of construction and resources for regional libraries, support of secondary publications, and the establishment of branches of NLM if necessary. The Board of Regents of the NLM would be designated the policy advisory group to the Surgeon General in the administration of these provisions. The bill calls for a \$117,500,000 program for a period of five years, with an annual authorization of \$23,500,000.

Advisory Committee Named

On October 2, 1964, the appointive members of the NLM Board of Regents were designated by the Secretary of Health, Education and Welfare as the Board of Regents Advisory Committee for Extramural Programs to advise the Surgeon General on policy matters concerning the development of extramural support programs in library-related biomedical information and communication systems under existing authorities delegated to the Director, NLM, by the Surgeon General. In addition, the Committee was charged to review and make final recommendations on the grant applications submitted to the Public Health Service in these fields. At its opening meeting, November 6, BRACEP reviewed the first applications for grants. Subsequent meetings were held on March 19 and June 18.

Training Activities

The PHS has instituted the Grants Associates Program as one means of providing trained scientists with experience in the administration and management of federally supported health research. Two scientists participating in the program, Dr. John J. Harris and Dr. Albert A. Pawlowski, requested and were given a training assignment in the Library's Extramural Program. Dr. Douglass, as Acting Associate Director, served as Training Coordinator. In the five-week period of Dr. Harris' assignment, April 12-May 10, he assisted in the preliminary review of several training grants, participated in a training site visit, was actively involved in PTD's application review procedure and the subsequent spring meeting of the ASCP. Dr. Pawlowski was assigned to NLM for a one-week period in May for a more general orientation. During his stay he gained an overview of library operations and spent a considerable portion of his time becoming familiar with special programs.

The staff also participated in the four-week training program arranged for a field work student, Miss Daphne Allen, from the School of Librarianship, University of Washington. Miss Allen's assignment with NLM was arranged as part of her regular curriculum to provide

practical experience in the organization, functions, and procedures of a major research library. Mrs. Hanke was her preceptor.

Committee Representation

In order to insure an efficient integration of NLM's new Extramural Program with existing programs, formal and informal liaison arrangements have been made with Departmental and operating Agency committees. Within the NIH extramural activity, guidelines have been established for referral and review procedures with the Division of Research Grants.

Speaking Engagements

At the 75th Annual Meeting of the Association of American Medical Colleges held in Denver, in October, the Associate Director delivered a paper, co-authored with the Director, entitled "The National Library of Medicine: Relationships to Medical Education and Research."

Early in December, at the conference on Future Programs of Medical Library Cooperation sponsored by the Survey of Medical Library Resources of Greater N.Y., she made a brief presentation describing the Library's Extramural Program.

Mrs. Hanke participated as a panel member at the January meeting of the Washington, D.C. Area Medical Library Group. The topic under discussion was "Medical Library Internship Programs."

RESEARCH AND TRAINING DIVISION

During the past year, the Research and Training Division has given priority to planning for the implementation of health-science library support programs under pending legislation. Utilizing present authorities and with the limited funds allocated to the Division, a grants program has been initiated.

The establishment of the grants program was made possible through the appropriation of \$120,000 for fiscal year 1965 for extramural support of research and training in the history of medicine. It was arranged that the program for the support of noncategorical and multicategorical research and training in this field would be transferred from the National Institute of General Medical Sciences to the NLM.

The acceptance of responsibility for this program required that policies and procedures necessary for the conduct of such a program

be established. These included those necessary to such functions as receipt, referral, review, approval, payment, grants management, etc.

In addition to applications in the history of medicine area, others in the field of library-related health communication activities were accepted for review. Inasmuch as funds for the payment of these were not available, applicants were given to understand that they were being accepted for review only and that commitment of money for their support could not be made in fiscal year 1965.

A summary table showing grant applications received during the year is shown in Table 1., and the grants awarded on Table 2.

In addition to the applications actually submitted for consideration, RTD has on file several hundred letters that cite general or specific needs in the areas of research, training, resources, construction and fellowships. Over one hundred individuals have visited the Division to discuss their needs in these areas and their hopes of obtaining support.

Training Meeting (January 6, 1965)

In an attempt to focus on one of the growing problems facing medical libraries, the Division sponsored a one-day discussion on the training of personnel in medical library and information science and communications research. Dr. Marjorie Wilson and Dr. Carl D. Douglass served as co-chairman. The meeting was held to obtain the advice and counsel of some of the nation's leading academicians, scientists, and practicing medical librarians in developing realistic training goals. The discussion focused on a critical examination of the qualitative and quantitative aspects of library manpower requirements. Attending the symposium were: Dr. Estelle Brodman, President, Medical Library Association, Inc.; Mr. Ralph T. Esterquest, Harvard University, Schools of Medicine and Public Health Library; Mr. Alvin J. Goldwyn, School of Library Science, Western Reserve University; Dr. Robert M. Hayes, Professor, School of Library Service, University of California, Los Angeles; Dr. Arnold Lazarow, Chairman, Department of Anatomy, University of Minnesota; Dr. Lysle H. Peterson, Director of Research, Graduate Hospital of the University of Pennsylvania; Dr. Eli A. Rubinstein, Chief, Training and Manpower Resources Branch, National Institute of Mental Health; Dr. Ralph R. Shaw, Distinguished Professor, Rutgers, The State University, New Jersey; Dr. Don R. Swanson, Dean, Graduate Library School, University of Chicago; Dr. Mortimer Taube, Chairman of the Board, Documentation, Inc.; Mr. Robert Taylor, Director, Center for the Information Sciences, Lehigh University.

Information Science Course (October 26-November 17)

The General Electric Company conducted a pilot course, which was arranged and managed by the Research and Training Division, in Fundamentals of

Modern Information Science for library managerial and technical staff. That the objectives of the course, an introduction to the general field of information science with a fairly intensive coverage of MEDLARS, particularly the area of demand search were successfully carried out, was evidenced by opinions expressed in a written evaluation submitted by the 20 participants. Overall satisfaction with the course was quite high, indicating that an occasional mismatch of content and interest was accepted by the participants as a necessary result of compromises made to cover a broad field in limited time.

PHS Midwest Conference

The NLM was represented at one of a series of regional meetings on PHS grant and award programs by Dr. Douglass who presented NLM's current and proposed support programs. Held April 2 and 3 in St. Louis, the conference provided an opportunity for biomedical scientists, librarians, academic administrators, and business officials to discuss with the PHS staff the interrelationships between research activities and grant and award administration. The conference series arranged by DRG, NIH, in response to requests from medical schools, graduate schools and other institutions, is designed to provide a region-wide forum for scientific program-management discussion. Seven states and 97 institutions were invited to participate.

Speaking Engagements

Dr. Carl Douglass was the guest speaker at the January 20th meeting of the Baltimore Hospital Librarians, a group organized to explore avenues of community cooperation in order to provide effective library service to hospitals in their area. The discussion was centered on NLM, intramural and extramural support.

On February 26, he outlined and discussed NLM extramural programs and plans at the Institutes Training Program Meeting.

Early in March Dr. Douglass was the NLM representative at the conference on Criteria for Effective Information Systems for Medicine sponsored by the Systems Development Corporation and the University of Pennsylvania. The Airlie House meeting included representatives from university medical centers, industry, and hospitals as well as several PHS Bureaus and Divisions.

On June 1, Dr. Douglass presented a paper entitled "Extramural Programs of the National Library of Medicine" at the 64th Annual Meeting of the Medical Library Association in Philadelphia. The overall topic for the session was "Local, Regional and National Library Corporation."

PUBLICATIONS AND TRANSLATIONS DIVISION

The major responsibilities of the Division are threefold: (1) a research contract program for the support of biomedical publications; (2) a Special Foreign Currency Program (Public Law 480) in Poland, Israel, and Yugoslavia; and (3) provision of the Secretariat for the Public Health Service Advisory Committee on Scientific Publications. In addition, the Division has, this past year, been reviewing and analyzing the subject matter coverage of its support programs and identifying and responding to specific needs of the biomedical scientific community. The Division has also been developing cooperative arrangements, both formal and informal, with other elements of the Public Health Service, government agencies, and national and international bodies, both governmental and nongovernmental.

Obligations FY 1965

During the year, the Division obligated a total of \$1,076,425. Of the total \$491,252 were obligated under the Dollar Contract Program, and \$585,173 (in dollar equivalents) were obligated under the Special Foreign Currency Program (Public Law 480).

Dollar Contract Program for the Support of Biomedical Publications

The Division provided support for biomedical publications in the total amount of \$491,252 for FY 1965, primarily through the research contract mechanism. Although the Library has the authority, in accordance with a ruling of the Comptroller General of the United States, to make grants for the support of biomedical publications, no grant funds were available during FY 1965 for this type of support. The distribution of expenditures under this program as shown in Table 3 includes support for abstracts, bibliographies, translations, studies, and conference proceedings, and the special printing of publications whose compilation had been supported by the Division, through the Government Printing Office. A detailed description of these projects is given in Table 3.

All of these activities have been sponsored in an effort to improve scientific communication by providing scientists with various information tools for both the domestic and the foreign literature. As an example, the Division funded the compilation and printing of the Bibliography on Sarcoidosis, 1878-1963 (W. Mandel, M.D., J. H. Thomas, M.D., C. T. Carman, M.D., and J. P. McGovern, M.D., PHS Publication No. 1213. 1964). This publication is a comprehensive, indexed bibliography of the world's literature from the earliest description of sarcoidosis up to and including most of 1963. To date, the Division has distributed this publication to medical libraries in 500 nongovernmental institutions and 140 federal institutions; to 160 research workers in the field; and to scientific journals for announcement and review. The response has been excellent and researchers have indicated they have more time for laboratory research due to less searching of the literature.

The Division has been making foreign literature more readily available through its support of abstracting and translating activities. However, with the large increase in the number of sources providing translations, and the number of translations produced, it was felt that information on the availability of translations should be provided United States scientists on a more frequent and rapid basis.

In 1962, the Division developed a cooperative arrangement between the Library and the Clearinghouse for Federal Scientific and Technical Information (formerly the Office of Technical Services) in the Department of Commerce for the preparation of the Bibliography of Medical Translations (BMT), a selected listing of translations in biomedical fields. The first issue of this bibliography covered the period January 1959 through June 1962, and four quarterly supplements, covering July 1962 through June 1963, followed. Quarterly supplements 5 and 6 (July 1963-December 1963) and 7 and 8 (January 1964-June 1964) have now been published and distributed. The BMT and its quarterly supplements have been well received by the biomedical community, but, in order to provide a more adequate service to the biomedical community, the Library requested, and received, authorization from the Bureau of the Budget for issuance of this publication on a semimonthly basis, starting in July 1965. The Clearinghouse for Federal Scientific and Technical Information prepares camera-ready copy for the publication, which is then printed at the Government Printing Office. Distribution is made in accordance with a new mailing list prepared by the Division. Work on bridging the gap for the period July 1964 through June 1965 is being continued, and a cumulative author, journal source, patent, and subject index will be prepared to cover Volume II, Part 1 (January through June 1965) and Part 2 (July through December 1965).

One principle, adopted by the Division in its support of abstracts and translations during the year, is that support should be given for only the intellectual preparation of the material and those costs which are concerned with publication aspects should be assumed by the professional scientific organization. This principle has been accepted by groups with whom the Division has contracts.

Special Foreign Currency Program (Public Law 480)

Under the Agricultural Trade Development and Assistance Act of 1954 (PL-480), special foreign currencies have accrued to the credit of the United States from the sale of U.S. surplus agricultural commodities. These currencies may be used to "collect, collate, translate, abstract and disseminate scientific and technological information" and to "conduct research and support scientific cooperation between the United States and other countries..."

Total funds obligated (\$585,173 in dollar equivalents) for scientific communications activities under the Special Foreign Currency Program were distributed as follows: Israel, \$106,200; Poland, \$383,000; and Yugoslavia, \$88,000. An additional \$7,973 were obligated for travel required for project programming.

In previous years, the Special Foreign Currency Program has been primarily concerned with the translation of foreign biomedical literature and the provision of the resultant English language publications to the U.S. scientific community. During the past year, the Division has concentrated on broadening the scope of its activities to include specialized abstracting and digest activities, preparation of histories of medicine, and critical reviews. The Library presently has programs in Israel, Poland, and Yugoslavia and is programming in India.

The Division has also been interested in increasing the scientific input and evaluation of its Special Foreign Currency Program. Accordingly, a special ad hoc group of consultants was convened to discuss the status of the programming and, in particular, to examine opportunities for encouraging the preparation of critical reviews under this Program. These critical reviews will not be literature summarizations of what has been done in a particular field, rather the Division is interested in encouraging leading scientists to examine and evaluate the status of their particular specialty fields and to write reviews which highlight the research challenges of the future.

Participants in this ad hoc meeting included:

Dr. Floyd S. Daft, Visiting Professor, Albert Einstein College of Medicine and Former Director, National Institute of Arthritis and Metabolic Diseases

Dr. William H. Feldman, Chief, Laboratory Research in Pulmonary Diseases, Department of Medicine and Surgery, Veteran Administration Central Office

Dr. Donald S. Fredrickson, Clinical Director, National Heart Institute

Dr. H. Bentley Glass, Professor of Biology, Johns Hopkins University

Dr. E. Harold Hinman, Chairman, Department of Preventive Medicine, Jefferson Medical College

Dr. Thomas H. Hunter, Vice Chancellor, University of Virginia School of Medicine

Dr. James R. Kingston, MC USN, Office of Naval Research

Dr. Robert Burr Livingston, Associate Chief for Program Development, Division of Resources Facilities and Resources

Dr. John L. Parks, Dean, George Washington University, School of Medicine

Dr. Francis O. Schmitt, Chairman, Neurosciences Research Program, Department of Biology, Massachusetts Institute of Technology

Dr. Roland B. Scott, Head, Pediatrics Department, Howard University School of Medicine

Dr. Alex I. Shelokov, Medical Director, Chief of Laboratory of Virology and Rickettsiology, Division of Biologic Standards

Dr. N. Raphael Shulman, Chief, Clinical Hematology Branch, National Institute of Arthritis and Metabolic Diseases

Dr. Dewitt Stetten, Jr., Dean, School of Medicine, Rutgers University

As a result of this meeting and follow-up activity, many subject matter fields and scientists have been identified.

Translations. Three Yugoslav journals, selected by United States and Yugoslav scientists as particularly significant in biomedical research, were made available in English language editions, and ten biomedical Polish journals were supported in a similar manner. Serials and monographs were translated in Israel.

Histories of Medicine. The Library is interested in supporting scholarly histories of medicine which have an intrinsic value to current medical science. Accordingly, the Division is supporting, in Israel, the scholarly translation of History of Physicians (Ibn Abi Usaybi'ah) a medieval Arabic work of prime historical importance which has not been translated in its entirety into a Western language.

Critical Reviews. The Division is active in programming critical reviews in select areas of science by outstanding scientists in the countries in which special foreign currencies are available.

Drug Projects. The Division has taken two positive steps in response to United States needs in the drug information field. These are two exploratory projects, one at the request of the Surgeon General, the Drug Digest Project, and the other in cooperation with the Food and Drug Administration, the Drug Toxicity Abstracts Project.

The Drug Digest Project has been initiated on a one-year trial basis, to (1) to make important research on drugs published in foreign languages more readily available to U.S. scientists, and (2) to explore the effectiveness of packaging this information in the form of digests. Fifty non-English journals have been selected for this experiment, and include such languages as French, German, Czech, Spanish, Italian, Rumanian, Russian, Polish, and Hebrew. Professor L. Wislicki, Department of Pharmacology, Hadassah Medical School, Hebrew University, heads a

group of 23 scientists and physicians working on the project. This group of researchers, professors, and practitioners represents a unique combination of linguistic and scientific skills. The digests are not merely abstracts but are instead comprehensive extracts of the original articles and include the most important data, graphs, and tabular material. Each digest contains the name of the scientist preparing the digest, who may add, in a clearly marked explanatory or evaluate footnote, information important to the understanding of the digest. The first compilation of Drug Digests, containing fifty digests, appeared in June. The initial distribution of twelve monthly compilations of digest is being made to approximately 800 scientists and physicians who will participate in this experiment by evaluating journal and article selection, subject matter coverage, scientific quality, and usefulness of this form of packaging information.

The Drug Toxicity Abstracts Project is a cooperative effort between the National Library of Medicine and the Food and Drug Administration. (FDA). The Library has programmed with the Israel Program for Scientific Translations for the preparation of abstracts from 25 foreign journals in the drug field not now covered by the Food and Drug Administration in its MLB Journal of Literature Abstracts or by any other major abstract service. This Drug Toxicity Abstracts Project thus supplements present abstract coverage by special screening of a select group of German, French, Polish, Italian, and Spanish journals. Article selections are (1) clinical reports of adverse reaction of drugs in humans, and (2) those animal studies which are concerned with any effects (either toxic) or nontoxic) of drugs or chemicals on the fetus of animals. These abstracts will be used by the medical staff of the FDA and will also be incorporated into the FDA MLB Journal of Literature Abstracts which is distributed to physicians, medical organizations, and others in the U.S. and abroad. The abstracting is performed by the same scientific group, under Dr. Wislicki, which is preparing the Drug Digests.

Oral Research Abstracts. There is presently no comprehensive abstract service covering the world's scientific literature in oral health, and dental science and practice. The Division has responded to this need by programming for the preparation of abstracts in these fields under its Special Foreign Currency Program in Israel. This effort of the Division is coupled with support by the National Institute of Dental Research, the Division of Dental Public Health, and American Dental Association. Thus, several elements of the Public Health Service are working cooperatively with a U.S. professional scientific organization to improve basic scientific communication. This represents an interesting cooperative effort which may well serve as a model for similar activities in other subject matter fields. This first-year experiment has been started, whereby an Israeli group of 23 scientists and dentists, under the direction of Dr. Ino Sciaky, Director, Hadassah School of Dental Medicine, Hebrew University, has begun preparation of some 3,300 abstracts from an initial list of 40 journals which were selected by the American Dental Association and the National Library of Medicine. These journals include such languages as German, French, Czech, Italian, Flemish, Dutch, Spanish, Danish, Polish, and Russian. It is anticipated that this

experiment will develop into a long-range project with the appearance of an oral research abstracts journal in 1966.

The PHS Advisory Committee on Scientific Publications

The Public Health Service Advisory Committee on Scientific Publications (ACSP) is concerned with (1) the review of applications for Public Health Service (PHS) support of biomedical publications, and (2) policy considerations. This committee is funded by the Division of Research Grants (DRG), National Institutes of Health; and the Secretariat is provided by the Library with Miss Mary E. Corning, Chief, Publications and Translations Division, serving as the Executive Secretary. The membership of the Committee is given on Table 4. The committee met three times during the year and examined 43 grant applications assigned to 17 different institutes and divisions within PHS. The committee works very closely with other study sections of DRG, and often conducts joint reviews with them.

Subcommittees. The committee has three subcommittees: Abstracts and Translations, Critical Reviews, and Guidelines, which are concerned with these specific aspects of scientific communication problems.

The Abstracts and Translations Subcommittee has been concerned with the development of a comprehensive study on the abstracting and indexing coverage of the world's primary biomedical literature; a study which the Division wishes to support via a contract mechanism. It is anticipated that this study will collect basic data and that another study will be simultaneously undertaken for development of a methodology for the analysis and the evaluation of these basic data. A special meeting of representatives from the major abstracting services, Biological Abstracts, Chemical Abstracts, Excerpta Medica, and the indexing service, Index Medicus, was held with representatives from the National Science Foundation and members of the subcommittee. The purpose of this meeting was to encourage full participation of the abstracting services in the proposed study. Collaboration of these services with the Library has been achieved and will continue during the conduct of the study.

The Subcommittee on Critical Reviews has been concerned with the identification of subject matter areas and subject matter experts for critical reviews. Requests were made to a small group of scientists and editors for the identification of critical reviews which meet the criteria of the subcommittee. Subsequent discussions have centered around the mechanism for encouraging and supporting the preparation of critical reviews and the motivation factors which stimulate the participation of leading scientists in this activity.

The Subcommittee on Guidelines has initially examined the number of requests received and reviewed by the ACSP involving the preparation and/or publication of single publications, such as books or monographs.

The Subcommittee has recommended some initial guidelines which would assist the Staff in responding to such requests, would enable the ACSP to be consistent in its review of these applications, and could ultimately serve as basic policy for the support of single publications.

Relationship to Other Elements of the Public Health Service

Beginning in 1963, the Surgeon General delegated to the National Library of Medicine authority "to act as a 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, and so forth, and distribution of these translated materials to the American biomedical community." During this past year, the Division has worked closely with other elements of the Public Health Service both in terms of substantive programs and of financial arrangements. In addition to the Oral Research Abstracts Project and the Drug Digest Project, the Division engaged in a cooperative endeavor with the Bureau of State Services in administering the translation of a Russian journal Gigiena i Sanitaria (Hygiene and Sanitation).

PTD Mailing List

The Division has been very active in revising and expanding its present mailing list. A new list has been completed which includes approximately 1400 institutions representing both federal and nonfederal medically oriented institutions having collections of biomedical materials. The libraries included in the list have been categorized into types of institutions in order to provide for controlled mailings of publications either of a highly specialized nature or of a broad general interest, or of reference tools. A list of publications supported by the Division has been prepared, and includes those from both the Dollar Program and the Special Foreign Currency Program. A copy of this list is appended to this report as Table 5 .

Personnel

Mrs. Sally Miles transferred from the Division to another part of the Library. Mr. Joseph Foley, Scientific Grants Assistant at the National Heart Institute joined the Staff as Scientific Publications Officer.

Miss Corning was re-appointed by the National Academy of Sciences-National Research Council (NAS/NRC) to the U.S. National Committee for the International Commission on Optics. She was also named to the NAS/NRC U.S. National Committee for the International Federation for Documentation.

Table 1.

SUMMARY OF GRANT APPLICATIONS RECEIVED - FY 1965
NATIONAL LIBRARY OF MEDICINE - EXTRAMURAL PROGRAMS

Type - Area	Received & Reviewed		Approved by BRACEP		Grant Awards (incl. indirect costs)		Contract Awards (incl. indirect costs)		Approved - Unpaid		Disapproval or Transfer	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
RESEARCH												
History of Medicine	24	\$ 230,227	17	\$145,117	6	\$ 46,491	--	---	11	\$ 99,367	7	\$ 72,291
Information Science	16	513,300	4	204,831	--	---	3	\$59,663	2	168,332	12	308,469 ^{1/}
Total Research	40	\$ 743,527	21	\$349,948	6	\$ 46,491	3	\$59,663	13	\$267,699	19	\$380,760
TRAINING												
History of Medicine	2	\$ 93,415	2	\$ 93,415	2	\$ 65,000	--	---	--	---	--	---
Information Science	8	442,651	5	273,277	--	---	--	---	5	273,277	3	147,378
Total Training	10	\$ 536,066	7	\$366,692	2	\$ 65,000	--	---	5	\$273,277	3	\$147,378
FELLOWSHIPS												
History of Medicine	2	\$ ---	1	\$ 8,406	1	\$ 8,406	--	---	--	---	1	---
Totals - All Types ^{2/}	52	\$1,279,593	29	\$725,046	9	\$119,897	3	\$59,663	18	\$540,976	23	\$528,138

^{1/} Includes 1 transferred before BRACEP review (\$185,133)

^{2/} Does not include 4 applications received during FY 1965, pending final review (\$82,123)

This report does not include 14 applications received and reviewed where NLM was secondary assignee.

TABLE 2

Grants Awarded

Grantee: Robert W. Broughton, Colorado College

Title: Toward a National Health Service

Period of Performance: 6/18/65 - 8/31/66

Grantee: University of Florida

Title: The Medical Profession in Medieval England

Period of Performance: 4/1/65 - 3/31/66

Grantee: University of Illinois

Title: Environmental Physiology and F Schwatka

Period of Performance: 4/1/65 - 3/31/66

Grantee: The Johns Hopkins University

Title: Training Program in History of Medicine

Period of Performance: 7/1/65 - 6/30/66

Grantee: Miss Nydia Margarita King

Title: Fellowship

Period of Performance: one year

Grantee: University of Pennsylvania

Title: The Germ Theory Comes to America

Period of Performance: 6/1/65 - 5/31/68

Grantee: Rutgers, the State University

Title: Impact of Enlightenment on Materia Medica in Britain

Period of Performance: 4/1/65 - 3/31/66

TABLE 2 (Contd.)

Grantee: Westminister College

Title: American Doctors in Paris, 1825-1848

Period of Performance: 6/1/65 - 5/31/66

Grantee: Yale University School of Medicine

Title: Training Program in History of Medicine

Period of Performance: 7/1/65 - 6/31/66

TABLE 3

Publications and Translations Division

Contract and Printing Support of Biomedical Publications - FY 1965

I. CONTRACTS	AMOUNT	
A. Abstracts	\$175,414	
B. Bibliographies	27,159	
C. Translations	231,066	
D. Studies	19,963	
E. Conference Proceedings	<u>40,000</u>	
	TOTAL	\$483,602
II. PRINTING		<u>7,650</u>
	TOTAL	<u>\$491,252</u>

TABLE 4

FY 1965 Membership of
PHS Advisory Committee on Scientific Publications

Chairman

Dr. Richard R. Willey
Tucson, Arizona

Dr. John Z. Bowers, President
Josiah Macy Jr. Foundation

Dr. John L. Caughey, Jr.
Associate Dean and Associate
Professor of Medicine
Western Reserve University

Miss Louise Darling
Librarian, Biomedical Library
University of California Medical Center

Dr. H. Bentley Glass
Professor of Biology
Biology Department
Johns Hopkins University

Mr. Robert A. Harte
Executive Officer
American Society of Biological Chemists

Dr. Bernard Holland
Professor and Chairman
Department of Psychiatry
School of Medicine, Emory University

Dr. G. Halsey Hunt
Executive Director
Educational Council for Foreign Medical Graduates

Miss Eleanor Johnson
Bio-Medical Librarian
The University of Chicago

Mr. Frederick G. Kilgour
Librarian
Yale Medical Library

Dr. Granville W. Larimore
First Deputy Commissioner
Department of Health
State of New York

Dr. Malcolm H. Merrill
Director
California State Department
of Public Health

Dr. Sholom Pearlman
Secretary
Council on Dental Research

TABLE 5

Publications Supported by the Publications and Translations Division

(Source information is provided at end of each citation and
a key listing of sources is given at the end of the list)

BIBLIOGRAPHIES AND REVIEWS

Bibliography of Medical Translations

- Vol. I (Jan. 1959-June 1962). 1962. \$2.25. Sup. Docs.
General Subject Index (Jan. 1959-June 1962). 1964. PHSP 1212, NLM
Quarterly Suppl. 1&2 (July 1962-Dec. 1962). 1964. \$1.00 Sup. Docs.
Quarterly Suppl. 3&4 (Jan. 1963-June 1963). 1964. \$.65 Sup. Docs.
Quarterly Suppl. 5&6 (July 1963-Dec. 1963). 1965. \$.70 Sup. Docs.
Quarterly Suppl. 7&8 (Jan. 1964-June 1964). 1965. \$1.25 Sup. Docs.
Quarterly Suppl. 9&10 (July 1964-Dec. 1964). (in preparation)
- Vol. II, Part 1 (Jan. 1965-June 1965) (in preparation)
Part 2 (July 30, 1965) (semimonthly) \$4.50/yr.,
single issue 60¢, Sup. Docs.

Bibliography on the Golden Hamster. Comp. by Hulda Magalhaes, Ph.D.
To be published in The Golden Hamster, Its Biology and Use in Medical Research. 1966
The Iowa State Univ. Press.

Bibliography on Sarcoidosis 1878-1963. Comp. by Wm. Mandel, M.D., J.H. Thomas, M.D.,
C.T. Carman, M.D. and J.P. McGovern, M.D., PHS Publication No. 1213. 1964. 229p. NLM

Soviet Theoretical Biology, 1958-1963: Review and Annotated Bibliography of Soviet
Publications in the Fields of Biomathematics, Biometrics, and Biomedical Computing.
Walter R. Stahl, M.D. (in press).

FOREIGN SCIENTIFIC DIRECTORIES

Directory of Biomedical Institutions in the Union of Soviet Socialist Republics.
Comp. by Mordecai Hosh. Ph.D., 1965. Sup. Docs.

Polish Research Guide, 1964. Warsaw, Centralny Inst. Informacji Naukowo-Technicznej
I Ekonomicznej, 1963. 419p. \$4.25 OTS-62-11062. CFSTI

Yugoslav Scientific Research Directory, 1964. Belgrade, NOLIT Pub. House, 1964.
590p. \$6.00 OTS-64-11452. CFSTI

TABLE 5 (Contd.)

TRANSLATIONS

I. SELECTED ARTICLES

Federation Proceedings Translation Supplement. Washington, D.C.
(Bimonthly). Each issue contains 50-60 full translations from East
European (primarily Soviet) biomedical journals. \$10/yr., \$2.00/issue. FASEB.

Polish Medical Journal, Warsaw, Polish Academy of Sciences.
(Bimonthly). (From various Polish biomedical journals). Single issues
individually priced. v. 1, 1962 OTS-62-11066; v. 2, 1963 OTS-63-11409;
v. 3, 1964, OTS-64-11409. CFSTI

II. COVER TO COVER TRANSLATIONS. CFSTI

A. Soviet - Monographs and Collected Papers

Gambaryan, L.S., The Motor Analysor. (Moscow, Medgiz, 1962) 170p. \$1.75 OTS-63-11174

Karamyan, A.I., Evolution of the Function of the Cerebellum and Cerebral
Hemispheres. (Leningrad, Medgiz, 1956) 161p. \$1.75 OTS-61-31014

Klosovskii, B.N., Excitatory and Inhibitory States of the Brain. (Moscow,
Medgiz, 1961) 460p. \$4.50. OTS-63-11176

Klosovskii, B.N., Blood Circulation in the Brain. (Moscow, Medgiz, 1951) 309p.
\$3.25. OTS-63-11171

Nasonov, D.N., Local Reaction of Protoplasm and Gradual Excitation (Leningrad,
Akad. nauk SSSR, 1959) 425p. \$4.25 OTS-61-31011

Pavlovskii, E.N., ed., Natural Foci of Human Infections. (Moscow, Medgiz, 1960)
201p. \$2.00 OTS-63-11069

Petrov, I.R., and Filatov, A.N., Plasma-Substituting Solutions. (Leningrad,
Medgiz, 1958) 217p. \$6.00 OTS-64-11113

Physiology and Biochemistry of Aging. (Khar'Kov, 1960) 308p. \$3.00 OTS-63-11067

Problems of Cytology and Protistology. (Moscow, Akad. nauk SSSR, 1960) 372p.
\$3.75 OTS-61-31010

Rozenfel'd, I.I., Curative and Preventive Aspects of Public Health Services
for Rural Population. (Moscow, Medgiz, 1955) 45p. \$.50 OTS-63-11068

Rozenfel'd, I.I., Planning and Allocation of Medical Personnel in Public
Health Services. (Moscow, Medgiz, 1961) 139p. \$1.50 OTS-63-11070

Skriabin, K.I., Trematodes of Animals and Man. (Moscow, Akad. nauk SSSR, 1960)
444p. \$4.50 OTS-63-11128

TABLE 5 (Contd.)

B. Soviet - Serials

Works of the Institute of Higher Nervous Activity. (Moscow, Akad. nauk SSSR)

Pathophysiological Series

- | | |
|---|---|
| v. 4, 1958. 252p. \$2.75. OTS-61-31021; | v. 7, 1960. 266p. \$2.75. OTS-63-11168; |
| v. 5, 1958. 350p. \$3.50. OTS-61-31022; | v. 8, 1961. 132p. \$1.25. OTS-63-11169; |
| v. 6, 1959. 300p. \$3.50. OTS-61-31023; | v. 9, 1961. 225p. \$4.25. OTS-63-11170; |
| | v.10, 1962. 212p. \$6.00. OTS-63-11191. |

Physiological Series

- | | |
|---|---|
| v. 3, 1959. 263p. \$2.75. OTS-61-31018; | v. 6, 1961. 314p. \$3.25. OTS-61-11167; |
| v. 4, 1958. 268p. \$2.75. OTS-61-31019; | v. 7, 1962. 338p. \$7.00. OTS-63-11193; |
| v. 5, 1960. 276p. \$2.75. OTS-61-31021; | |

Problems of Radiobiology. Leningrad.

- | | |
|--|---|
| v. 1, 1956. 363p. \$3.50. OTS-61-31015; | v. 2, 1957. 434p. \$4.50. OTS-61-31016; |
| v. 3, Tsentral'nyi, 1960. 336p. \$3.50. OTS-61-31017 | |

Works of the Pavlov Institute of Physiology, Moscow, Akad. nauk SSSR

- | |
|--|
| v. 9, <u>Problems of Physiology and Pathology of Digestion and Metabolism.</u> 1960. 569p. \$5.25. OTS-63-11172 |
| v.10, <u>Problems of Physiology of Higher Nervous Activity of the Nervous System.</u> 1962. 432p. \$4.50. OTS-63-11173 |

Polish - Journals

(single issues individually priced)

Acta Biochimica Polonica, Warsaw, Polish Acad. of Sciences (Quarterly)

- v. 9, 1962. OTS-62-11051; v. 10, 1963. OTS-63-11406; v. 11, 1964. OTS-64-11406

Acta Physiologica Polonica, Warsaw, Polish Acad. of Sciences (Bimonthly)

- v. 13, 1962. OTS-62-11063; v. 14, 1963. OTS-63-11407; v. 15, 1964. OTS-64-11407

Acta Poloniae Pharmaceutica, Warsaw, Polish Pharmaceutical Soc. (Bimonthly)

- v. 20, 1963. OTS-63-11412; v. 21, 1964. OTS-64-11412

Archivum Immunologiae Et Therapiae Experimentalis, Warsaw, Polish Acad. of Sciences

- v. 10,11 (Quarterly) v. 12 (Bimonthly)
v. 10, 1962. OTS-62-11069; v. 11, 1963. OTS-63-11410; v. 12, 1964. OTS-64-11410

Polish Endocrinology, Warsaw, Polish Acad. of Sciences (Bimonthly)

- v. 13, 1962. OTS-62-11064; v. 14, 1963. OTS-63-11408; v. 15, 1964. OTS-64-11408

Experimental Medicine and Microbiology, Warsaw, State Inst. of Hygiene and Polish Assn. of Microbiologists (Quarterly)

- v. 15, 1963. OTS-63-11411; v. 16, 1964. OTS-64-11411

Folia Morphologica, Warsaw, Polish Acad. of Sciences (Quarterly)

- v. 22, 1963. OTS-63-11413; v. 23, 1964. OTS-11413

TABLE 5 (Contd.)

Polish Review of Radiology and Nuclear Medicine, Warsaw, Polish Radiological Assn. (Bimonthly)

v. 27, 1963. OTS-63-11415; v. 28, 1964. OTS-64-11415

Epidemiological Review, Warsaw, Polish Assn. of Epidemiologists and Infectionists and State Inst. of Hygiene (Quarterly).

v. 17, 1963. OTS-63-11414; v. 18, 1964. OTS-64-11414

Yugoslav - Journals

(single issues individually priced)

Acta Medica Jugoslavica, The Union of Medical Associations of SFRY, Belgrade, NOLIT Publ. House (Quarterly).

v. 16, 1962. OTS-62-11760; v. 17, 1963. OTS-63-11456; v. 18, 1964. OTS-64-11456

Archives of Biological Sciences, Serbian Biological Soc., Belgrade, NOLIT Publ. House (Quarterly)

v. 14, 1962. OTS-62-11759; v. 15, 1963. OTS-63-11455; v. 16, 1964. TT-64-11455

Biological Review, Croatian Soc. for Natural Sciences, Belgrade, NOLIT Publ. House, 1963-4 (Quarterly).

v. 15, 1962. OTS-62-11762

Medical Journal, Medical Assn. of Croatia, Belgrade, NOLIT Publ. House (Monthly).

v. 84, 1962. OTS-62-11763; v. 85, 1963. OTS-63-11458; v. 86, 1964. TT-64-11457

Sources

CFSTI Clearinghouse for Federal Scientific and Technical Information,
Port Royal and Braddock Roads, Springfield, Virginia 22151
(Use order number for each publication)

FASEB Federation of American Societies for Experimental Biology,
9650 Wisconsin Avenue, Washington, D. C. 20014

NLM Publications and Translations Division, National Library of Medicine,
8600 Rockville Pike, Bethesda, Maryland 20014

Sup. Docs. Superintendent of Documents, U.S. Government Printing Office,
Washington, D. C. 20402

CHAPTER THREE

TECHNICAL SERVICES DIVISION

There were three levels of operation in Technical Services Division throughout FY 1965. The first was the steady provision of procurement and cataloging services essential to the day-to-day operation of the Library; several notable changes in procedure and organization increased efficiency without hampering routine operations, and the retirement of the Head of the Selection and Searching Section was effected smoothly because of the unusually well qualified area specialist who replaced him.

The second level was the implementation of the program, inaugurated at the end of FY 1964, of expanding the Library's collecting scope and coverage. The principal impetus, of course, came from the appointment of a Coordinator for the program; his professional knowledge, augmented by many conferences with scientists in peripheral-interest areas, is of direct value to NLM.

On the third level, TSD moved from the completion, in September 1964, of the total systems analysis to the evolution of the Interim Catalog Module.

The Chief of the Division was re-elected on March 29 to the post of President and Chairman of the Board of the United States Book Exchange for the 1965-66 term. In August, he represented both the Library and the USBE at the Fourth Conference of the Association of Latin American Medical Schools in Pocos de Caldas, Brazil, where he read papers on the two organizations. The Division Chief also accepted the chairmanship of the Federal Library Committee's Task Force on Procurement Procedures in Federal Libraries.

SCOPE AND COVERAGE

The Coordinator for the Development of the Collections was appointed in July to review the current scope and coverage policies of the Library, with special attention to the auxiliary sciences, and to make recommendations to the Chief, TSD, for changes in these policies.

For several months, the Coordinator reviewed all aspects of the Library's scope policies, with reference particularly to the decision made in March 1964 to expand the collection in environmental health, behavioral sciences, fundamental chemistry, and, especially, veterinary medicine.

To learn the present status of research in the four areas with highest priority for expansion, the Coordinator met with scientists from various National Institutes of Health and other PHS organizations (see Attachment 1), as well as outside agencies and individuals. These meetings have provided information on current research activities and probable trends in the fields concerned. The Library is also receiving lists of journals regularly reviewed by the scientists active in these research and study programs; such lists are examined to identify desirable titles not in the NLM collections.

Weekly conferences with the six selectors were initiated in November, to review scope policies and to answer questions concerning the selection of literature in the non-core areas. The conferences have also enabled the Coordinator to keep the selectors informed of scope interpretations and decisions. They are to continue regularly each week during the coming year.

In March, a Committee on Scope and Coverage was established, charged with "providing concentrated and continuous attention to the definition of NLM's policies for acquisition, scope and coverage." The Coordinator was appointed chairman shortly thereafter, and had convened the Committee nine times by the end of the fiscal year.

Projects Completed:

1. Recommendations for the addition of 120 new serial titles to the collections.
2. Development of current lists of serial holdings in 17 related non-core fields.
3. Development of lists of potentially desirable serials in these fields which are not now received at NLM.
4. Institution of weekly conferences with selectors for general and specific scope decisions.
5. Development of preliminary guidelines for selectors in the behavioral sciences (now being revised).
6. Development of definitive guidelines in veterinary medicine.
7. Preparation of preliminary report for the Committee on Scope and Coverage.

Projects and Plans to be Completed:

1. Discussions to be arranged with authoritative scientists in the fields of anthropology, botany, mathematics, physics, and marine biology.

2. Backlog of sources to be examined for new serial title possibilities and monographs (e.g., Harvard List of Books in Psychology).
3. Development of guidelines in chemistry and environmental health.
4. Planning for selective revision of Library Manual B-5 and B-5a (or initiate search for alternative classification schemes).

INTERIM CATALOG MODULE

In October 1963, the decision was made to postpone the inclusion of book citations in Index Medicus. In February 1964, a systems analyst was assigned to review all TSD operations, in order to develop a general computer systems design for the Division. At the same time, the decision was made to publish a 1960-65 sexennial catalog instead of the usual quinquennial, and to discontinue the present method of producing cards and book catalogs after the calendar year 1965.

A generalized design for a total system, including procurement, serial record, and cataloging was prepared after a systems analysis in September 1964. It was soon evident, though, that such a system could not be put into effect quickly enough to take over the production of a book catalog and catalog cards after the termination of the LC agreement to publish the NLM Catalog, which expires at the end of 1965. Thus, the concept evolved of an "Interim Catalog Module," or ICM, to be implemented in January 1966 for use until the total system can be programmed. The ICM will introduce a limited number of catalog entries into MEDLARS and Index Medicus.

Express Acquisitions and Cataloging Bulletin. Since 1948, the National Library of Medicine has published an annual book catalog. The delay inherent in such a publication, however, precludes its use by other medical libraries as a current acquisition and cataloging tool. NLM will initiate an "express acquisition and cataloging service." The first issue is planned for January 1966. This express service is the first application of the Library's computerized information retrieval system, MEDLARS, to the cataloging operation.

Computer programs being prepared for this new system will also produce 3" x 5" cards for the Library's card catalog. The Library is also investigating the possibility of making catalog cards available to other medical libraries.

All indications are that the new express service will be well received. Every medical librarian questioned so far has responded enthusiastically to the idea. The Medical Library Association is currently distributing a questionnaire to ascertain which libraries

will subscribe to the service, what their needs and preferences are, and how it may best support and strengthen acquisition and cataloging activities of the nation's medical libraries.

Publishers, too, have responded very favorably. The Chief of the Technical Services Division has met with all major medical publishers in this country, and with several foreign publishers, to tell them of the Library's plan. Virtually all members of the Association of American Medical Book Publishers, several non-member publishers, and at least three major foreign medical publishers have agreed to send review copies of their books to the Library immediately upon publication, as is done with other reviewing media. Thus, the subscribing libraries will receive - earlier than has before been possible - information essential to their procurement and cataloging of medical publications.

This extremely favorable response from publishers indicates that NLM may ultimately receive for review all medical books from all publishers, not merely those firms which specialize. This will mean more assured control and coverage of the literature, and better service to the medical libraries of the nation.

SELECTION AND SEARCHING SECTION

Selection Activity. The expanded scope and coverage policy is being gradually implemented in the peripheral areas of the biomedical sciences. Many new serial titles have been ordered, including over sixty new titles in dentistry, several in veterinary medicine, and others in the behavioral sciences, chemistry, and nursing.

In cooperation with the National Clearinghouse for Mental Health Information of NIMH, about 2,200 data sheets compiled by NCMHI staff on journals in the behavioral sciences were checked against the NLM Serial Record. Information on serial titles held by the Library was forwarded to the Clearinghouse. Listed titles not being received here await further consideration for inclusion in the collection.

Unfilled interlibrary loan requests to NLM are being routinely examined by the selectors to identify titles in the designated auxiliary fields which might warrant being added to the collection.

Duplicates of current American publications are now being received much more quickly from the Library of Congress. The first available duplicate copy of each medical title is set aside; NLM has the privilege of selecting from these pieces before any other government agencies.

To facilitate the distribution of incoming material and improve bibliographic control, the Section compiled a directory of countries by geographic area, indicating the selector-specialist responsible for each.

New Bibliographic Sources. Fifteen bibliographic sources were added to the list of prospects examined for regular selection, bringing the total of such bibliographies to 236. The new sources are:

1. New technical books; a selective list with descriptive annotations. New York Public Library. 10/yr.
2. United Nations. Monthly sales bulletin. Bulletin mensuel des ventes. Boletín mensual de ventas. New York
3. Joint acquisitions list of Africana. Compiled by the African Department, Northwestern University Library, Evanston, Ill. Bimonthly.
4. Library materials on Africa. London, Standing Conference on Library Materials on Africa. 3/yr.
5. East African Common Services Organization. East African Literature Bureau. Annual Report. Nairobi.
6. Africana newsletter. Bulletin d'informations africana. Stanford, Calif., The Hoover Institution. Quarterly.
7. Caribbean acquisitions. Gainesville, Fla. Annual
8. Państwowy zakład wydawnictw lekarskich. Dysponenda. Warszawa. Annual.
9. Polish scientific periodicals: current contents. Warszawa, Polska Akad. Nauk. 10/yr.
10. Anuario bibliográfico colombiano. Fichas para el Anuario Bibliográfico colombiano. Gainesville, Fla. Semiannual.
11. U. S. Library of Congress. American Libraries Book Procurement Center, Tel-Aviv. Accessions list, Israel. Tel-Aviv. Monthly.
12. U. S. Library of Congress. American Libraries Book Procurement Center, Cairo. Accessions list, Middle East. Cairo. Monthly.
13. [Ch'ulpan Nyongam] Publishers' annual. Seoul, Korea, Tachan Ch'ulpan Munhwa Hyophoe. Annual.
14. The Ceylon national bibliography. Nugegoda, Ceylon, National Bibliography Branch, Dept. of the Government Archivist and Registrar of Books and Newspapers. Quarterly.

15. Union catalog of Philippine publications on science and technology. Manila, National Institute of Science and Technology, Division of Documentation. Irregular.

Exchange. The transfer to the area specialists of full responsibility for foreign exchange operations made it mandatory to reevaluate prospective exchange sources, and to develop a system of up-to-date records organized for ready access. NLM's most important single exchange publication is Index Medicus; Bibliography of Medical Reviews, Public Health Reports, NLM duplicates, and NLM bibliographies are also used for exchange. The foreign distribution of Index Medicus, both gift and exchange, is as follows:

Latin America	121 recipients
Canada	5 "
Africa	12 "
Asia	95 "
Europe	315 "
Other	8 "
Total	<u>556 recipients</u>

In addition, there are 159 addressees for regular distribution of the other NLM publications and duplicates, making a total of 715 exchange partners.

Potentially valuable relationships were established with foreign visitors from Afghanistan, Mexico, the Soviet Union, Czechoslovakia, and Yugoslavia.

Soviet Union. Exchange partner added during the year:

Leningrad. Nauchno-issledovatel'skiĭ institut anti-biotikov (Leningrad Scientific Research Institute of Antibiotics)

As before, the best source of publications from the Soviet Union is the State Department Procurement Officer in Moscow, with whom NLM has a blanket-order agreement. The Library received 967 publications from him during FY 1965, and has renewed its agreement with this officer to subscribe to certain Russian periodicals which were not received on exchange during FY 1965.

The next most important means of procurement for Soviet publications is the exchange program, through which a total of 392 items arrived from various Soviet libraries and institutes.

A third major source is the duplicate transfer collection at the Library of Congress. Very few items were purchased.

Eastern Europe. Most of the acquisitions from the East European states, especially Poland and Bulgaria, were received on exchange. A total of 402 monographs were sent from these two countries. A special letter of appreciation came from the National University Library in Skoplje, Yugoslavia, for a gift of NLM surplus material sent on the anniversary of the disastrous earthquake which heavily damaged the Library and destroyed a great part of its collection.

A blanket exchange agreement was established with the Latvian State Public Library in Riga, which will send NLM all medical monographs and serials currently published in Latvia in exchange for Index Medicus.

Another new exchange source is the Medical School, University at Sarajevo, Yugoslavia.

In Czechoslovakia, the principal exchange partners remain the National Medical Library in Prague and the Czechoslovak Academy of Sciences.

Latin America. The Division Chief's trip to Brazil resulted in the receipt of a number of items from the Federação Panamericana de Associações de Escolas de Medicina and its affiliated associations. Most noteworthy are the official publications of member associations.

It is hoped that exchange agreements with institutions in several countries near Cuba will provide NLM with more Cuban publications in 1966, especially missing issues of Cuban serials already established in the collection.

Far East. Several newly received national bibliographies from the Orient have proved to be major selecting tools (see list, above). Constant efforts to obtain material from the Far East Communist countries produced good results. From Mainland China, 28 serial titles are being received regularly, as compared with 17 last year; 4 new serial titles from North Korea and 2 serials from North Viet-Nam have also been added to the collection.

Three hundred and forty-five valuable old Chinese medical monographs were received from a private collection in Formosa.

In response to many requests from researchers concerned with Chinese medical literature, a Bibliography of Communist Chinese Periodicals Held by NLM was compiled, and a proposal to publish it is now under consideration.

At the request of the Chief, Bibliographic Services Division, the Oriental area specialist, Mr. Kim, screened the 1,300 Japanese periodicals received by NLM, and recommended 242 titles of scientific importance for indexing in Index Medicus, grouping them under sixty-one subject headings.

ACQUISITION SECTION

Expenditures. At the end of October, over \$63,000 had been obligated of the \$77,000 available for the purchase of serial and monographic publications (including HMD items) through FY 1965. Journal subscription renewals alone required \$29,000. This figure was higher for four reasons: the addition of about 300 titles, many unusually expensive, as a result of scope expansion; obtaining multiple copies of indexed titles, at the request of RSD; the need to renew a number of three-year subscriptions which had begun in January 1962; and substantial price increases for many titles.

The rest of that sum was obligated for orders which had been held over from FY 1964 because of insufficient funds, and for a few extremely expensive items, as well as for the normal flow of additions to the collection.

By October 31, enough orders awaited placement to use up virtually all of the book funds available for FY 1965, which would have left no money for regular purchases, for the reinstatement of lapsed subscriptions, or for acquisition of serial issues found missing during the routine reading of the Serial Record.

Although an additional \$13,000 was then made available, it was soon exhausted. For the rest of the year, the Library had to rely solely on money obtained from cancellations (less than \$1,000 per month) to purchase essential items. Therefore, a backlog of about \$30,000 worth of orders awaited placement after July 1.

On about June 16, the Section received \$40,000 for the purchase of general literature, plus \$3,200 from the Agency for International Development to buy material published in underdeveloped countries. The tremendous effort exerted by Acquisition Section personnel enabled them to obligate these funds, as required, during the remaining two weeks of the fiscal year. A total of almost 6,000 orders was prepared by telescoping the normal efforts of nearly four months into two weeks.

The situation described above, except for its rather dramatic climax, is not unique in the Library's fiscal history. Just as FY 1964 and 1965 funds were prematurely depleted by holdover orders from the previous years, so the funds for FY 1966 would have been reduced almost immediately by \$30,000 - the value of holdover orders awaiting the new fiscal year.

Serial Record. The serious overcrowding of the Serial Record necessitated the removal to the separate file of all new serial titles for which issues had been requested but not yet received. These titles were chosen for transfer because most users of the Serial Record want to determine the specific issues of a title that are held by the Library, rather than whether it has been ordered. Such a shift, therefore, would not hamper routine inquiries.

To relieve the overcrowding of the Serial Record further, at least three additional Kardex sections would have been needed, at a cost of nearly \$1,000. It proved more economical to buy a new type of tub file with vertical visible records, to which were transferred data for all journals indexed in Index Medicus. This arrangement affords better control of these important titles, making it possible, in fact, to give full priority treatment to the ordering and checking in of indexed journals.

Multiple copies of a larger number of indexed journals were ordered, to reduce the problem of journal issues unavailable to readers because of delay in indexing. Better use is also being made of the duplicate issues irregularly received by the Library by automatically checking in any second copies of these titles and forwarding them to the Reading Room without delay.

Publications Distribution and Exchange. For many years, the Acquisitions Section was responsible for distributing all of the Library's publications, since most recipients were exchange partners, and exchange operations are, logically, a function of the Division. This arrangement has grown more unwieldy as the number of NLM publications has increased. In August 1964, the publications distribution function was, therefore, transferred to Administrative Services. The Section also turned over to the area specialists of TSD's Selection and Searching Section responsibility for all foreign exchange operations.

CATALOGING SECTION

NLM Catalog. The National Library of Medicine Catalog was slightly larger this year than last year. 12,832 titles appeared in the 1964 edition, compared with 11,592 in 1963. This is partly because the number of titles has increased as the Library's scope of collecting has broadened.

Technical Report Literature. This continues to be one of the most difficult and time-consuming problems. Because it is troublesome for the whole Division, all sections in TSD kept statistics for a month to find out exactly how much time was being spent on technical reports. These data will be incorporated in a combined report from the four sections.

Serials Recataloging. Recataloging of W 1 serials has progressed well and will be nearly completed by the end of the calendar year, if the cataloger who resigned in May can be replaced by a cataloger with adequate language background and serials cataloging experience.

Classification. With a growing number of medical libraries throughout the country using the NLM Classification, two projects have become

imperative. The first is the preparation of a new edition of the Classification incorporating the major changes needed to accommodate certain concepts (e.g., nucleic acids, immunology) which either did not exist or were less relevant to biomedical subjects when earlier editions appeared. Occasional modifications have been made from time to time, but they are too few and frequently awkward.

This project will entail not only the editorial tasks of planning and adding numbers to the present Classification, but also correcting the Library's cataloging records and books - all demanding the combined efforts of catalogers, Catalog Maintenance personnel, Bindery staff, and stack assistants.

The second project is the addition to the Classification of a list of the Library of Congress classification numbers used by NLM for supplementary and related non-medical material. This would constitute an abridged LC classification of about 750 pages (a very tentative estimate). To compile the list from the LC volumes in the Section (which have been annotated over many years for NLM catalogers' use); to rewrite and reorganize the terms for such an abridged edition; to prepare an index; and to edit the abridgment for publication: these steps would probably need at least one man-year of work.

Here, too, the Library's service obligations to other medical libraries are a primary justification. A number of small libraries cannot afford to buy a set of LC schedules (many volumes of which are out of print, in any case), but they need this information if they are to coordinate their cataloging work with that of NLM.

An alternative (though only partial) solution would be to add to the index of the NLM Classification references to all LC numbers used by NLM, without including the abridged schedules themselves. Either undertaking would be approved by LC, since the schedules are not copyrighted.

Plans are being made for the major changes in the card catalog that will be needed in FY 1966. These involve not only the addition and correction of subject headings, but also the changes required because of the proposed extensive liberalization of the use of sub-headings.

Arrearages. There is very little backlog in the cataloging of current materials, except in languages that no one in the Section can handle, and in collective cataloging and thesis cataloging, both of which have very low priority.

Other than the serials mentioned above, there has been almost no recataloging. Still to be completed are serial documents, elephant folios, box items, "public health reports," pamphlet volumes, and theses. All except serial documents have low priority, either because of the nature of the material or because of the fact that many are already represented in the Index Catalogue.

Notes for Medical Catalogers. In the October 1964 issue of the Medical Library Association Bulletin, the Chief, BSD, announced that a newsletter would be forthcoming to keep users informed of MeSH changes. At a joint meeting on the use of MeSH for books and book catalogs, it was decided that TSD would assume responsibility for this newsletter, since it is of interest primarily to catalogers. There has also been a need for an NLM vehicle to inform users of additions and changes to the NLM Catalog and the NLM Classification. Therefore, it was decided to publish information about the three Library publications in one bulletin, Notes for Medical Catalogers.

The initial mailing list was compiled by selecting library addressees from the mailing list for the NLM News. Additional recipients are those libraries replying to Dr. Karel's announcement and to notices since published elsewhere. The Library has received about one hundred requests for the publication since the mailing of Vol. 1, No. 1, dated April 1965.

CATALOG MAINTENANCE SECTION

1964 NLM Catalog. The 1964 NLM Catalog was issued in June 1965, about a month later than usual. While its format is the same as that of the three preceding issues, it is the first to reflect the catalogers' use of subject headings from the third edition of MeSH. It contains 12,832 citations, and will be the last annual volume of the Catalog.

Sexennial Catalog, 1960-65. Much work has been accomplished on the subject section of what is to be the last cumulative catalog. At the end of June, all subject cards for 1960-63 had been interfiled and all main subject heading and cross-reference guides not used in 1964 had been reviewed and interfiled into the Catalog. Except for current additions and corrections, nothing more can be done until the Library of Congress sends the stripped-down cards from the 1964 Catalog and the cards in the 1965 series.

At the end of FY 1965, there were about 9,064 main entries, 2,375 added entries and 1,423 cross references already typed in the 1965 series for the cumulative catalog, the last to be issued in the present system. When the prospective computerized cataloging system has been established, the Catalog Maintenance Section will be eliminated, perhaps with some of its operations incorporated in other sections of the Library.

Attachment I

PUBLIC HEALTH SERVICE AGENCIES PROVIDING SCOPE CONSULTATION

NATIONAL INSTITUTE OF MENTAL HEALTH

Laboratory of Psychology

Laboratory of Socioeconomic Studies

Program Analysis Section

Research Grants Branch

National Clearing House for Mental Health Information

NATIONAL CANCER INSTITUTE

Laboratory of Biochemistry

Laboratory of Biology

Laboratory of Pathology

DIVISION OF RESEARCH SERVICES

Laboratory Aids Branch

Animal Production Section

Animal Hospital Section

Comparative Pathology Section

DIVISION OF RESEARCH FACILITIES AND RESOURCES

Animal Resources Branch

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

Section on Rheumatic Diseases

Laboratory of Experimental Pathology

BUREAU OF STATE SERVICES

Division of Air Pollution

Division of Water Supply and Pollution Control

CHAPTER FOUR

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

For the Bibliographic Services Division Fiscal Year 1965 was an especially challenging year and one in which promise became fulfillment. It was a year notable for its contribution to biomedicine through new, expanded, and improved library publications and services; a year notable for progress in serial medical literature identification and selection, analysis, storage, retrieval, and dissemination.

Since August 1964 full-scale computerized publication of Index Medicus has been provided through a computer-driven phototypesetter called GRACE (Graphic Arts Composing Equipment). In addition, recurring bibliographies on cerebrovascular diseases; dentistry; fibrinolysis, thrombolysis, and blood clotting; and rheumatology are being published, and negotiations are under way for the production of six others. Two of the latter group, in nursing and medical education, are scheduled for issuance in 1966.

Production difficulties were encountered in indexing because of a shortage of indexers fully qualified to meet the rigorous demands imposed by a growing literature, by increased requirements for depth indexing, and by the necessity of providing training both to employees and to representatives of outside organizations. In spite of these difficulties, new production levels, as well as greater consistency and higher quality, were achieved during the year. From a fiscal year total of 144,057 articles in 1964, output increased to 151,635 articles in 1965.

In connection with problems relating to quality and consistency of indexing, the Library solicited the assistance of Dr. William H. Spring, Jr., and Mr. Boris Anzlowar to study indexing with particular reference to the field of drug toxicology. As a result of their study, Dr. Spring and Mr. Anzlowar prepared a report entitled "Human Factors in MEDLARS Indexing." This report was subjected to critical evaluation by key personnel of the Library staff who then recommended to the Director those parts of the report which should be implemented. As a result of such recommendations and procedural changes growing out of the continuing critical evaluation of the indexing operation, the ratio of revisers to indexers was increased, collaboration between indexers, searchers, and medical subject headings specialists, as well as other Library personnel, was encouraged and effectuated, and contacts with other Library personnel regarding terminology also took place.

Moreover, recommendations were completed for revised check tags and a revised indexer data sheet likely to be put into use in the first half of Fiscal Year 1966. Also, steps were taken to revise the Indexer's Manual, the first edition of which was completed in August. The Manual has become a major tool, not only in the work of the National Library of Medicine's own indexers but in indexing activities of other libraries as well.

The Library's continuing concern with the quality of the serial titles indexed and the effect of the Library's selection of journals for Index Medicus on other medical libraries in both the United States and abroad resulted in the establishment of a Committee on Selection of Journals for Index Medicus. This Committee met for the first time in September 1964. It is composed of prominent medical librarians, physicians, scientists, and others familiar with problems relating to selection of periodical literature in biomedicine.

The Committee assumed the responsibility of continually and critically reviewing and revising the List of Journals Indexed in Index Medicus (LJI) and agreed to meet three times a year to make recommendations to the Library not only on individual journal titles but also on indexing policies. As a result of its three meetings during the present year, the Committee recommended the addition of 466 titles, and the deletion of 324 titles. It also recommended that journals not be listed in LJI until actual indexing of them has begun. The Committee, furthermore, recommended that the Library establish formal criteria for evaluation of the journals presented for its consideration; seek additional expert opinion on journal quality; and address itself to the various classes of literature in the following order of priority:

1. Increase coverage of substantive biomedical and related journals;
2. Increase the number of journals indexed in depth;
3. Index monographs; and
4. Index congresses, proceedings, conferences, symposia, and seminars.

Implementation of these recommendations was under consideration at the close of the year.

Activities of this Committee are expected to have far-reaching and long-enduring effects. Already decisions by the Library following the Committee's recommendations have markedly altered the character of titles indexed and the depth to which many of these titles are indexed. In the months ahead the impetus provided by the Committee is expected to result not only in indexing of the highest quality journals to be

found in the biomedical literature of the world but also in the identification of a list of several thousand titles regarded as the most substantive in the entire field of biomedical and related literature.

Like the Index Section, the Search Section, despite the small number of trained searchers in it and the heavy demands generated by training activities, was able to increase steadily the number of searches completed monthly, while simultaneously improving the efficiency and quality of searching. Reflecting the biomedical public's acceptance of the Library's ability to provide sophisticated computerized retrieval services, the number of demand search requests received increased from 62 in the month of July 1964 to 276 in June 1965, with an average rate of 147 per month. From a total of 239 in Fiscal Year 1964, demand search requests increased to a total of 1,757 in 1965. The year marked the establishment of recurring demand bibliography service; through this service the Library has been able to satisfy user needs for continuous current awareness in instances where it is not practicable for the user to issue a recurring bibliography, with its requirements of formal publication and wide distribution.

In addition to the services provided by demand bibliographies and recurring demand bibliographies, arrangements were made to establish a literature alerting service by publicizing and distributing selected demand bibliographies on general subjects judged by the Library as likely to be of interest to large segments of the biomedical public.

With rapid expansion of requests for MEDLARS services, the Board of Regents established policy to govern the Library's activities in the areas covered by MEDLARS. In essence, this policy provides that MEDLARS search services be made available to qualified requesters without charge within limits imposed by the Library's resources. A qualified researcher is defined as an individual, group, or institution who can, if asked to do so, provide evidence that the search is requested for purposes which will advance investigation, education, or practice in the health sciences. Priorities of service are to be: (1) Physicians and scientists associated with nonprofit educational and research institutions, and agencies of the government; (2) Individual health practitioners; (3) Industrial concerns, and (4) Physicians and scientists associated with foreign agencies and institutions.

With regard to recurring bibliographies, the Board recommended that the Library engage in cooperative efforts to create and produce such bibliographies with government agencies and nonprofit scientific and professional societies and institutions which will undertake to provide national distribution of the published products. Costs of publication and distribution are, normally, to be borne by the recipient of recurring bibliographic services, although this is not a necessary condition for the preparation of a recurring bibliography.

Since communication is dependent on vocabulary, Medical Subject Headings (MeSH), the Library's controlled vocabulary used in indexing and in retrieving citations from the MEDLARS, is basic to the success or failure of MEDLARS. Through efforts of MeSH personnel and contributions of personnel in the Index and Search Sections, considerable progress was made in the expansion, refinement, further logical development, and display of medical subject headings. Moreover, subheadings were reinstated, and tree (hierarchical) structures were developed in a number of categories.

Assistance to MeSH Section was provided by an ad hoc Committee on Epidemiology made up of biomedical specialists who volunteered their services to the Library; personnel of Chemical Abstracts; representatives of the American Medical Association; members of the Research Grants Index Group of the National Institutes of Health, and individuals of the National Academy of Sciences. Also, MeSH personnel participated in the development of compatible vocabularies for each of the recurring bibliographies issued by the Library during the year.

Among innovations for the control and dissemination of literature was the establishment by the Library of more stringent criteria and more effective controls over the quality and consistency of articles selected for Bibliography of Medical Reviews (BMR). Also, beginning with the March 1965 issue of Index Medicus, a separate section on biomedical reviews has been appearing with each issue of Index Medicus; however, the cumulation of medical reviews for annual publication is being continued. As part of its more stringent criteria and more effective controls, the Library discontinued its practice of selecting review articles from serials which are not regularly indexed and is now selecting review articles only from serial titles considered worthy of being indexed in Index Medicus.

Other innovations, which will become effective next fiscal year, are the ability to print demand searches and recurring bibliographies through GRACE with tracings--descriptive terms assigned by indexers to characterize articles.

Organization and Personnel. During Fiscal Year 1965 the structure of the Bibliographic Services Division remained unchanged. Miss Charlotte Kenton, who transferred to the National Library of Medicine from the Library of the National Institutes of Health, became head of the Search Section in October 1964. Otherwise, the section leaderships remained the same: Index, Mr. Constantine J. Gillespie, and Miss Adriana McCann as the senior subject headings specialist of the Medical Subject Headings Section.

The total personnel at the end of year was 31; eleven professional staff members were acquired and eight were separated.

The grade structure of indexers and searchers was raised, but it was still difficult to find personnel with both specialized biomedical knowledge and multilingual ability.

Steps were taken to discontinue, whenever feasible, index and search training provided to individuals on a demand basis and to substitute training in regularly scheduled classes. The reason for this action was to conserve time consumed by revisers and senior searchers involved in the training functions. Under the new procedure, Mrs. Thelma Charen of the Index Section and Miss Charlotte Kenton of the Search Section have successfully conducted one group training class and are preparing for a second group of trainees who will begin their training in July. At present these classes consist of four months each of index and of search training, with progression from Index to Search dependent upon a thorough grounding in indexing.

INDEXING

Statistics. The indexing of articles for Index Medicus totaled 151,635 articles in Fiscal Year 1965, an increase of 7,578 articles over Fiscal Year 1964 when 144,057 articles were indexed. These articles were indexed at an average rate of 5.7 articles per hour in contrast to the average of 6.2 articles per hour recorded during Fiscal Year 1964. The greater difficulty of indexing under MEDLARS and the requirement for depth indexing (with up to 20 headings used per article) of high quality journals has resulted in a drop in indexing rate from 10 articles per hour prior to MEDLARS, to 6.2 articles per hour in Fiscal Year 1964, to the present 5.7 articles per hour. Overtime indexing from September 26, 1964, through June 30, 1965, made a substantial contribution to the total indexing picture and was responsible in large part for the increase of 7,578 articles in indexing over Fiscal Year 1964. Overtime indexing of 1,400 hours for this period produced 19,027 articles at an average rate of 13.5 articles per hour. Without this overtime, only 132,608 articles would have been indexed for Fiscal Year 1965.

The average number of headings used per article has remained fairly steady through the months, and at the end of Fiscal Year 1965 was 2.8 Index Medicus headings per article (headings printed in the monthly issues of Index Medicus) and 3.8 non-Index Medicus headings (additional headings stored in the computer) per article, for a total of 6.6 overall headings per article. The average in Fiscal Year 1964 was 6.7 overall headings per article.

As the indexing rate has gone down, and the volume of indexed literature has increased, the indexing backlog has risen. Whereas the indexing backlog was 11,860 articles at the end of Fiscal Year 1964, it was 22,870 articles at the end of Fiscal Year 1965.

Revision. More revision of indexing work for accuracy and consistency has been a continuing aim of the Bibliographic Services Division in order to improve the quality of the Index Medicus. Revision, a necessity with new employees and trainees, is also a desired practice even with trained indexers. In Fiscal Year 1965, 98,777 articles or 65.1 per cent of the total articles were revised. In Fiscal Year 1964, only 44.1 per cent were revised, and in Fiscal Year 1963, only 26.9 per cent of the total articles indexed were revised.

Occupational Health Abstracting Project. The agreement to provide the Bureau of State Services, Public Health Service, with abstracts of all American articles on occupational health and industrial medicine was continued. 338 abstracts from 45 journal issues were sent to the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio. Abstracts for 481 articles were sent in Fiscal Year 1964, and 406 abstracts in Fiscal Year 1963.

Bibliography of Medical Reviews. Indexing for Volume 10, 1965, of the Bibliography of Medical Reviews was completed on October 5, 1964, with the completion of indexing for the 1964 issues of Index Medicus. Volume 10 contains 4,510 review articles. Of these, 4,270 were selected from journals regularly indexed in Index Medicus and 240 were selected from approximately 13,000 titles not regularly indexed in Index Medicus but scanned exclusively for the purpose of locating reviews. With Volume 11 for 1966, only articles from journals regularly indexed in Index Medicus will be included in BMR. Because the scanning of so many thousands of journals for review articles during the year resulted in the selection of only 240 articles, the effort spent in this scanning is now being used for regular indexing.

Dictionary File. The Dictionary File is now in its fifteenth year of providing definitions of, and indexing instructions relating to, chemical and medical terms for indexers in a 3x5 card format. When new expressions and new drugs appear in journals, the journal itself is usually the best source of information on them. The Dictionary File is used to record such information and make it readily available. In Fiscal Year 1965, 1,208 new cards were added to the Dictionary File, and 155 cards were withdrawn, to give a net total of 16,042 cards on file at the close of the year. During the past year the entire Dictionary File was microfilmed to enable the Library to make additional copies of the File for regional MEDLARS centers and for other purposes. The microfilm record is updated every three months.

SEARCHING

Fiscal Year 1964 was one of preparation for, and transition into, MEDLARS. Demand searches were being performed on a purely experimental basis; computerized recurring bibliographies were only in the planning

stage; the Search Section was experiencing major problems in staffing; and production was severely limited by demands for system demonstrations, orientations, and training for both National Library of Medicine personnel and interested persons and groups from outside the Library.

Fiscal Year 1965 was the year in which the initial trial phase and the second trial phase of MEDLARS operation were gradually transformed into a functionally successful retrieval system. Testimony to the measure of success achieved is the growth in number of acceptable computer search requests from 239 in Fiscal Year 1964 to 1,757 in Fiscal Year 1965, and in the number of search requesters who repeatedly returned for MEDLARS services. Yet, the formulation, analysis, and release of 1,623 searches out of the 1,757 received during the fiscal year was accomplished with a staff consisting of only the head of the section, one senior searcher involved almost wholly with computer liaison and the preparation of recurring bibliography parameters, additional personnel equivalent in services to two trained searchers, and one part-time typist. Furthermore, this staff was itself in a learning phase for several months of the fiscal year and was engaged in (1) solving search strategy and related data processing problems; and in (2) systematizing and organizing processing procedures necessary to adapt and develop searching to a large scale operation.

Initially, search services were limited to persons able to provide critical appraisals of the bibliographies retrieved, so that MEDLARS might be improved through evaluation of items such as relevance of citations, adequacy of the terms used in the search formulation, effectiveness of the product, and time between submission of the search request and receipt of the bibliography. Feedback reports, provided by only about 15% of demand search recipients, centered largely on inadequacy of MeSH, lack of specificity, and inadequate formulation of the initial search questions by requesters. So far as can be determined from limited evidence, relevance was satisfactory. Complaints about the time element were so few as to be of no special significance.

As its ability to process demand search requests grew, the Library liberalized its policy of accepting requests from abroad and from United States profit-making institutions. Most requests, however, come from medical centers, small hospitals, and government agencies, including the Veterans Administration, with which the Library has a special agreement. Search requests from 22 Veterans Administration hospitals, which were selected by the Administration for initial testing of MEDLARS, have averaged 31 searches a month since January 1965. Negotiations are now under way to increase the number of hospitals participating in the program.

One of the special uses to which MEDLARS was put during the year was preparation of a subject index for the 1963 issues of Federation

Proceedings Translation Supplement of the Federation of American Societies for Experimental Biology.

Recurring Bibliographies. In the previous fiscal year, a number of experimental searches were formulated to provide information on construction of recurring bibliographies--bibliographies on broad subjects for nationally oriented organizations agreeing to publish and widely distribute the bibliographies on a nonprofit basis. As early as July 1964 all procedures necessary for the removal of test recurring bibliographies had been finished by the Search Section. Recurring bibliographies in the system were Index Medicus, Bibliography of Medical Reviews, Cerebrovascular Bibliography, and Index of Rheumatology. A trial run of the Cerebrovascular Bibliography was completed, and work was begun on producing an issue through GRACE. Although this was the first of the recurring bibliographies to be produced through GRACE, the first recurring bibliography processed by MEDLARS from inception to retrieval is Index of Rheumatology. At the close of the year, there were seven recurring bibliographies in production and seven under negotiation or in preliminary stages of formulation.

Recurring Demand Searches. In many instances, individuals, or organizations, have need for a current awareness service more frequent than annually and more specific than that which would qualify the retrieved citations as a recurring bibliography. To meet this kind of need, the Library began providing recurring demand bibliographies. At the end of the fiscal year, 16 such bibliographies were being distributed at intervals ranging between one month and six months.

MEDICAL SUBJECT HEADINGS

The attention devoted to the improvement and further development of Medical Subject Headings (MeSH) is described elsewhere in the Office of the Director section of this report, p.17. The Bibliographic Services Division was intimately involved in this effort; the indexing and searching staffs contributed suggestions and criticism, and made necessary adjustments to their procedures on a continuing basis.

The 1965 revision of Medical Subject Headings was completed on December 11, 1964. It included 579 new subject headings, 176 of which were dental headings. The addition of these new headings and the MEDLARS Dictionary Tape modifications generated by them required about 3,300 transactions.

An alphabetic listing of Medical Subject Headings including provisional headings and geographic names was issued in GRACE format on April 29, 1965. This listing is to be updated and issued quarterly for use by the Library's indexing and searching staffs.

Usage of Headings in Indexing. The headings most frequently used in indexing in 1964 were those in C category, Diseases, which accounted for 27.2% of the total, and D category, Chemicals and Drugs, 18.8%. These were closely followed by G category, Biological Sciences, and E, Analytical, Diagnostic and Therapeutic Technics, with 17.1% and 13.1%.

SEARCH ASSISTANCE TO MESH

During the six-month period January to June 1965, 91 requests for searches were made for subject headings analysis. Studies of provisional headings intended to become main headings accounted for most of these, with 179 provisional headings being searched.

TABLE 1

CYRILLIC BIBLIOGRAPHIC PROJECT

Xerox Copies of Data Sheets of East European and
Russian Articles Sent to Library of Congress

Month	FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
	<u>EE</u>	<u>Rus</u>	<u>EE</u>	<u>Rus</u>	<u>EE</u>	<u>Rus</u>	<u>EE</u>	<u>Rus</u>	<u>EE</u>	<u>Rus</u>
July	483	631	491	889	577	693	495	752	350	935
August	168	832	1,075	875	1,006	1,172	391	743	520	1,088
September	26	309	608	775	854	1,024	463	1,195	844	473
October	1,254	936	773	1,007	434	941	756	90	1,169	727
November	695	815	773	921	101	178	1,942	1,004	595	564
December	725	823	278	589	792	369	886	2,451	582	796
January	319	695	436	869	573	575	515	547	478	797
February	451	921	1,042	1,158	616	1,137	521	511	465	1,446
March	989	859	981	887	637	1,122	642	681	734	1,176
April	408	898	742	925	1,411	1,104	1,416	478	460	870
May	732	899	769	1,285	882	890	1,169	158	728	614
June	562	1,010	653	944	93	111	856	1,342	827	1,083
TOTAL ARTICLES	<u>6,812</u>	<u>9,628</u>	<u>8,621</u>	<u>11,124</u>	<u>7,976</u>	<u>9,316</u>	<u>10,052</u>	<u>9,952</u>	<u>7,752</u>	<u>10,569</u>
TOTAL ALL ARTICLES	16,440		19,745		17,292		20,004		18,321	

TABLE 2

ARTICLES INDEXED

<u>Month</u>	<u>FY 1961</u>	<u>FY 1962</u>	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>	<u>BACKLOG FY 1965</u>
July	9,471	12,020	12,491	11,637	10,754	15,590
August	11,099	12,178	13,195	11,721	9,002	19,580
September	9,090	10,272	11,720	9,407	11,004	18,590
October	9,817	11,502	8,702	11,089	12,174	19,530
November	9,383	10,326	9,155	7,412	12,187	17,400
December	8,372	9,588	9,069	8,739	12,857	19,840
January	10,203	13,437	13,247	13,722	11,818	20,190
February	10,793	10,776	12,243	14,108	11,985	20,170
March	11,196	13,267	12,843	16,050	14,773	22,420
April	10,574	11,059	14,209	13,348	14,726	20,990
May	11,175	12,244	12,321	13,483	13,713	24,960
June	<u>12,327</u>	<u>11,282</u>	<u>12,100</u>	<u>13,341</u>	<u>16,586</u>	<u>22,870</u>
TOTAL ARTICLES INDEXED	123,500	137,951	141,295	144,057	151,635	

TABLE 3

ARTICLES REVISED

<u>Month</u>	<u>FY 1961</u>	<u>FY 1962</u>	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>
July	2,587	4,138	2,864	1,851	7,084
August	3,976	4,301	2,616	1,515	5,042
September	4,896	3,613	1,323	1,857	8,989
October	3,673	4,225	825	2,950	6,302
November	5,480	2,486	4,941	1,471	6,290
December	2,674	2,368	1,351	3,056	7,875
January	3,344	3,478	3,428	6,272	8,104
February	3,564	2,795	3,352	5,920	7,597
March	4,416	4,098	5,889	7,602	10,443
April	4,636	3,271	3,744	11,784	10,252
May	3,896	3,119	4,121	8,694	9,568
June	<u>4,070</u>	<u>2,389</u>	<u>3,581</u>	<u>10,626</u>	<u>11,231</u>
TOTAL ARTICLES REVISED	47,212	40,281	38,035	63,598	98,777
REVISED ARTICLES AS PERCENTAGE OF INDEXED ARTICLES	38.1%	29.1%	26.9%	44.1%	65.1%

TABLE 4

JOURNAL ISSUES RECEIVED FOR INDEXING

<u>Month</u>	<u>FY 1961</u>	<u>FY 1962</u>	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>
July	1,000	1,087	1,370	1,080	1,491
August	1,008	1,124	1,566	1,029	1,297
September	954	1,041	1,166	1,342	1,124
October	1,016	1,102	1,203	1,184	1,259
November	903	1,052	1,283	987	1,046
December	863	869	553	851	1,267
January	1,075	1,347	1,714	1,571	1,063
February	1,019	1,294	990	1,144	1,069
March	1,257	1,220	1,372	1,152	1,636
April	1,005	1,080	1,416	1,438	1,514
May	1,177	1,311	1,410	1,309	1,268
June	<u>1,183</u>	<u>1,055</u>	<u>1,135</u>	<u>1,399</u>	<u>1,543</u>
TOTAL JOURNALS RECEIVED	12,460	13,582	15,178	14,486	15,577

TABLE 5

LIST OF JOURNALS INDEXED IN INDEX MEDICUS

SUMMARY OF ADDITIONS AND DELETIONS

	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>
Additions to <u>LJI</u>	122	33	466
Deletions from <u>LJI</u>	10	84	324
NET TOTAL OF JOURNALS BEING INDEXED	<u>2,244</u>	<u>2,299</u>	<u>2,441</u>

TABLE 6

DISTRIBUTION OF 2,441 JOURNALS INDEXED IN INDEX MEDICUS ACCORDING
TO CATEGORIES IN MEDICAL SUBJECT HEADINGS

<u>Category</u>	<u>Number of Journals Indexed</u>	<u>Percentage of Total Journals</u>
A Anatomical Terms	35	1.4%
B Organisms	61	2.5
C Diseases	871	35.7
D Chemicals and Drugs	153	6.3
E Analytical, Diagnostic and Therapeutic Technics and Equipment	160	6.6
F Psychiatry and Psychology	153	6.3
G Biological Sciences	1,238	50.7
H Physical Sciences	35	1.4
I Social Sciences	14	0.6
J Technology, Commerce and Industry	4	0.2
K Humanities	9	0.4
L Communication, Library Science and Documentation	3	0.1
M Named Group of Persons	0	0.0
TOTALS	<u>2,736</u>	<u>112.2%</u>

(NOTE: TOTAL NUMBER OF JOURNALS IN ALL THE CATEGORIES IS GREATER THAN
THE ACTUAL NUMBER OF 2,441 JOURNALS AND THE TOTAL PERCENTAGE IS GREATER
THAN 100 PER CENT BECAUSE MANY JOURNALS ARE CATEGORIZED IN MORE THAN
ONE CATEGORY)

TABLE 7

DICTIONARY FILE

	<u>FY 1961</u>	<u>FY 1962</u>	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>
Cards Added to File	1,819	1,131	390	906	1,208
Cards Withdrawn from File	371	232	76	145	155
Net Total of Cards on File	13,105	13,914	14,228	14,989	16,042

TABLE 8

MEDLARS SEARCHES PERFORMED

<u>FY 1965</u>	<u>Requests Received</u>	<u>Requests Completed</u>	<u>Requests in Backlog</u>
July	62	67	26
August	38	43	21
September	67	50	38
October	72	36	74
November	66	71	69
December	103	108	64
January	188	84	168
February	230	154	244
March	192	340	96
April	219	274	41
May	244	164	121
June	276	232	165
	<hr/>	<hr/>	<hr/>
Totals	1,757	1,623	1,127

TABLE 9

RECURRING DEMAND SEARCHES

as of June 30, 1965

<u>Topic</u>	<u>Periodicity</u>	<u>Requestor</u>
<u>Gastroenterology</u>	Monthly	National Institute of Arthritis and Metabolic Diseases
<u>Smoking and Health</u>	Monthly	Division of Chronic Diseases, Public Health Service
<u>Sudden Death in Infants</u>	Monthly	National Institute of Child Health and Human Development
<u>Venereal Diseases</u>	Monthly	Communicable Disease Center Atlanta, Georgia
<u>Drug Toxicology - FDA</u>	Monthly	Food and Drug Administration
<u>Drug Toxicology - AMA</u>	Monthly	American Medical Association
<u>Primates, Apes and Monkeys</u>	Monthly	University of Washington Primate Information Center Seattle, Washington
<u>Infectious Diseases in Invertebrates</u>	Semi-Annual	U.S. Department of Agriculture Index Catalogue Beltsville, Maryland
<u>Drug-Induced Abnormalities</u>	Upon request	University of Florida Gainesville, Florida
<u>Drug Toxicology/Analytical Toxicology</u>	Upon request	American Academy of Forensic Sciences
<u>Schizophrenia</u>	Monthly	Lafayette Clinic Detroit, Michigan
<u>History of Medicine</u>	Monthly	History of Medicine Division National Library of Medicine
<u>Aging</u>	To be determined	National Institute of Child Health and Human Development

TABLE 9 (Con't)

	<u>Periodicity</u>	<u>Requestor</u>
<u>Cardiopulmonary Resuscitation</u>	To be determined	American Heart Association
<u>Hand Surgery</u>	To be determined	American Society for Surgery of the Hand
<u>Vital & Health Statistics</u>	Monthly	National Center for Health Statistics, Public Health Service

TABLE 10

RECURRING BIBLIOGRAPHIES

as of June 30, 1965

<u>Periodicity</u>	<u>Requestor</u>	
<u>Index of Rheumatology</u>	Semi-monthly	American Rheumatism Association
<u>Index to Dental Literature</u>	Quarterly	American Dental Association
<u>Cerebrovascular Bibliography</u>	Four months	Joint Coun. Subc. on Cerebrovascular Dis., National Institute of Neurological Diseases and Blindness
<u>Fibrinolysis, Thrombolysis, and Blood Clotting</u>	Monthly	Committee on Thrombolytic Agents of National Heart Institute, National Institutes of Health
<u>Index Medicus</u>	Monthly	National Library of Medicine
<u>Cumulated Index Medicus</u>	Annually	National Library of Medicine
<u>Bibliography of Medical Reviews</u>	Annually	National Library of Medicine

Preliminary stages:

<u>International Nursing Index</u>	Amer. J. of Nursing Co.
<u>Index of Reproduction Research</u>	National Institute of Child Health and Human Development, National Heart Institute
<u>Obstetrics & Gynecology Index</u>	Obstetrics & Gyn. Survey
<u>Medical Education</u>	J. of Med. Education
<u>Cancer</u>	National Cancer Institute, National Institutes of Health
<u>Endocrinology</u>	Grant Liddle, Vanderbilt University
<u>Abridged Index Medicus</u>	National Library of Medicine

TABLE 11

USAGE OF SUBJECT HEADINGS FOR INDEXING ACCORDING TO CATEGORY,
CALENDAR YEAR 1964

	<u>Category</u>	<u>Number</u>	<u>Percentage</u>
A	Anatomical Terms	91,951	8.0%
B	Organisms	51,097	4.4%
C	Diseases	311,715	27.2%
D	Chemicals and Drugs	215,394	18.8%
E	Analytical, Diagnostic and Therapeutic Technics and Equipment	150,195	13.1%
F	Psychiatry and Psychology	32,186	2.8%
G	Biological Sciences	196,079	17.1%
H	Physical Sciences	22,283	1.9%
I	Social Sciences	27,527	2.4%
J	Technology, Commerce and Industry	10,483	0.9%
K	Humanities	5,160	0.4%
L	Communication, Library Science and Documentation	5,326	0.4%
M	Named Groups of Persons	<u>25,290</u>	2.2%
	TOTAL	1,144,686	

CHAPTER FIVE

DATA PROCESSING DIVISION

The two major activities of the Data Processing Division during Fiscal Year 1965 were:

1. Concentration on operation and improvement of MEDLARS with an accompanying increase in production volume,
2. Initiation of work on a new centralized-cataloging system, using existing computer equipment.

GRACE, (Graphic Arts Composing Equipment) the Library's unique computer photo-typesetter, was used successfully throughout the year. A Honeywell-200 computer system was installed in January to accelerate the input and output of data into the Honeywell-800 computer and to allow conversion of MEDLARS citation files from Honeywell magnetic tape format to an IBM compatible format.

MEDLARS PRODUCTS

Index Medicus was produced successfully by MEDLARS throughout the fiscal year. The number of articles cited in the monthly issues rose from 133,413 in Fiscal Year 1964 to 156,783 in Fiscal Year 1965, an increase of 23,370 items. The Cumulated Index Medicus, a four-volume set of 5,697 pages, was processed in a record two weeks' time, utilizing the computer and GRACE.

The following Recurring Bibliographies went into regular production during the past year:

Cerebrovascular Bibliography
Index to Rheumatology
Index to Dental Literature
Fibrinolysis, Thrombolysis and Blood Clotting

All of these products were produced on the GRACE equipment.

In the March 1965 issue of Index Medicus, a monthly Bibliography of Medical Reviews was initiated. By the end of the fiscal year Demand Search production had risen to approximately 250 searches per month.

MEDLARS DECENTRALIZATION

A program to decentralize the MEDLARS search and retrieval capability was initiated in late 1964. This program calls for production of duplicate copies of the MEDLARS citation files on magnetic tapes which would be made available to medical schools, research institutions, governmental organizations, and industry for local search purposes utilizing their own computer facilities.

The first phase of this program of decentralization involves the establishment of a small network of regional MEDLARS Search Centers supported by the Library. First steps were taken this year to begin such a network with the initiation of two pilot projects, one with the University of California at Los Angeles, and another at the University of Colorado at Denver. The UCLA contract includes reprogramming of the MEDLARS Search system for an IBM 7094 computer. Good progress has been made on the reprogramming effort and the Los Angeles Center should become operational early in Fiscal Year 1966. The computer programs generated at UCLA will be available for use at future MEDLARS Centers.

The Colorado Center is utilizing a Honeywell-800 computer compatible with that at NLM and therefore no reprogramming was necessary. Processing of searches began on a once-a-week basis in March, 1965. The Colorado Center is also experimenting with a current-awareness service for individual physicians and scientists at the Medical Center.

The Library hopes to expand the network in Fiscal Year 1966. In order to provide the Board of Regents with data for selecting additional search centers, information was collected from 23 American Universities which had expressed formal interest in the program. In addition, 19 project site visits were conducted.

Training in the MEDLARS search techniques and utilization of MEDLARS programs was provided to individuals from UCLA and Colorado. International interest in MEDLARS was evidenced by similar training provided to two individuals from Great Britain and one from Sweden, where plans are also being made for utilization of the MEDLARS tapes.

SYSTEMS DEVELOPMENT

The most important new project was a study of the technical processing activities of the Library. An automated system has been designed to improve the capacity and efficiency of these processes through the use of data processing equipment. Computer programming to implement the first phase of this new system was initiated in January, 1965. This phase deals with the mechanized handling of cataloging information to produce:

1. A rapid cataloging service that can be used by other medical libraries for their acquisition and cataloging activities,
2. The NLM printed book catalog,
3. 3 x 5 cards for the central NLM catalog,
4. Incorporation into MEDLARS of citations to selected monographs.

The operational date for this new system is January, 1966.

The Division was also involved in several other new systems activities during the fiscal year. In order to improve the quality of the bibliographic input into MEDLARS, the Library is exploring an on-line system for direct communication between indexer and computer. Plans are also being made for a detailed evaluation of the MEDLARS Demand Search capability. Negotiations are underway with the National Science Foundation and Mr. Cyril W. Cleverdon, College of Aeronautics, Cranfield, Bedford, England, for a cooperative research project into the methodology of evaluation of retrieval systems, utilizing MEDLARS as a model for testing. As an outgrowth of these tests, which will span a period of approximately two years, the Library hopes to establish guide lines for effective monitoring and quality control of the system's products. Plans are also underway for the development of a graphic image storage and retrieval system for rapid photocopy retrieval of documents in the collection. The Data Processing Division is studying the potential interface of the bibliographic capabilities of MEDLARS with the graphic capabilities of this potential new system.

PROGRAMMING

The Programming Section was heavily involved with maintenance and improvements of MEDLARS operations and products during the year. Specialized programs were prepared to accomplish magnetic tape conversion to IBM format and to implement the installation of the Honeywell-200 computer. A series of programs have been completed and tested which provide a back-up for GRACE utilizing an IBM 1403 computer printer with upper and lower case characters. A three-column format for Index Medicus can be printed on the 1403 and photo-reduced, should the GRACE equipment become inoperable for a prolonged period of time.

The Programming Section has also been active in writing and testing programs to implement the catalog products described above under Systems Development. These programs will utilize the existing equipment in the Division with all outputs produced by GRACE.

INPUT

The Input Section typed and proofread the 156,783 items appearing in the Fiscal Year 1965 issues of Index Medicus, an increase of 18% over Fiscal Year 1964. This Section also was responsible for typing and proofreading of demand search requests and preparation of correction cards for maintaining the various MEDLARS computer files. Average Input production rates were 13 articles typed per hour and 20 articles proofread per hour. The average time required to type and proofread one demand search request was 45 minutes. The number of articles backlogged in the Input Section decreased 31% during the year. Personnel turnover continues to be the most serious problem in this Section.

COMPUTER OPERATIONS

The computer system is now being utilized on a two-shift basis to accommodate both production and testing of new programs. During the year there has been a marked shift of machine time from program testing to production.

Operation and maintenance of the GRACE equipment is the responsibility of the Operations Section. During Fiscal Year 1965 GRACE was used to produce 26,277 pages for the various MEDLARS bibliographies. The performance of the equipment was much better than anticipated. Of the 610:44 total hours of use, 31:00 hours were logged as down-time with an overall equipment performance of 95.1%. The heaviest load on the equipment occurred in early December when the Cumulated Index Medicus was produced in a two-week period. This job of 5,697 pages required 120 hours of time on the GRACE equipment.

The Operations Section also was responsible for the installation of the Honeywell-200 computer in January of 1965. The installation went smoothly with less than one week's production time lost.

Tape copying service in support of the MEDLARS Decentralization Program was initiated in February, 1965, for the University of Colorado MEDLARS Center. Under a cooperative agreement with the U. S. Department of the Army, tapes containing selected citations from MEDLARS are also being provided on a monthly basis to the Army Biological Warfare Center at Ft. Detrick, Maryland. These tapes are being utilized to provide a current awareness service to scientists at Ft. Detrick.

CHAPTER SIX

REFERENCE SERVICES DIVISION

Change is a measure of viability of an organism, and change is frequently a response to stimulus. The stimuli this year came primarily from the following sources: 1) the expanding capabilities of MEDLARS demand search, 2) the exploration of new techniques of graphic image storage and retrieval by the NLM/NBS team assigned to this problem and, 3) the need to re-examine the service policies of the Division. In order to develop a sounder basis for studying the impact of these policies, the Division began this year to reconsider some of the statistical data collected for program purposes. A primary necessity is to continually monitor the interlibrary loan activities of the Library both to assess its strengths and weaknesses, and to study the use made of the Library's collection. To assist in this effort the Division began to explore the possibility of automating this analysis, so that it could be provided on a continuous basis in the depth required and in a manner economically feasible.

NLM/NBS PROJECT TASK FORCE TO STUDY GRAPHIC IMAGE

Under an agreement between the National Library of Medicine and the National Bureau of Standards, an NLM/NBS project task force launched a collaborative research study of the Library's photoduplication and interlibrary loan production services.

The joint task force, led by Mr. Edward Forbes and Mr. Thomas Bagg, systems engineers from the Information Technology Division of the National Bureau of Standards, began work in the early fall of 1964. The primary objective is to study practical methods for improving the graphic image quality of photoduplication output (microrecords and hard copy) and possibilities for increasing the capacity of the existing system as it responds to the increasing demands of the interlibrary loan program. The task force will make a thorough review of present photoduplication facilities, production systems, and quality controls. Work flow, operating techniques, and quality limitations will also be examined in detail.

Necessary technical information is being developed jointly by NLM production personnel and the NBS technical representatives. The task force anticipates that, in the final phase of the study, significant progress will have been achieved toward the basic management objective of optimizing the microrecords image quality and format for more efficient retrieval and improved creation of hard copy for interlibrary loan purposes.

At the conclusion of the initial phase of the project, the NLM/NBS task force will submit a report to the Director of the Library, on the findings, recommendations, and technical accomplishments resulting from the studies. The initial phase report will include a practical evolutionary program to modify and strengthen the present production system, as substantial portions of the working collection are inevitably converted to high accessible archival quality microrecords.

REFERENCE SECTION

Readers Services. After two years of striking increases in readers visiting the Library (86% in 1963 and 21% in 1964) attendance has tended to level off at a peak (26,779) only slightly higher than that achieved last year. The first increases probably resulted from the facts that the Library moved into a new attractive and functional building and that it became much more accessible because of expanded parking facilities. Another influential fact was the Library's move into an area of high concentration of people using research libraries. The continuation of this trend toward increased use is sufficient answer to any misgivings anyone may have felt about the Library moving out of an urban center into the suburbs. Reference use of the Library also increased in all categories except phone inquiries. The greatest increase was in response to mail inquiries, an increase of 30% from 1,592 in 1964 to 2,077 in 1965. This represents one of the most demanding of the Reference Section's activities, and therefore is indicative of a significant increase in workload.

The reinstallation of a readers' register in November provided the opportunity to analyze the use being made by readers visiting the Library. The attendance was analyzed during four different months and showed a fair degree of consistency in the breakdown according to institutional affiliations and occupations. The averages for the four months were:

By Institutional Affiliations

Government	25%
University	60%
Other	<u>15%</u>
	100%

By Occupation

Medical and paramedical personnel	23%
Medical and paramedical students	25%
Other students	27%
Research personnel	11%
Other	<u>14%</u>
	100%

MEDLARS Search Coordination. With the expansion of MEDLARS demand search capabilities, the relationship of conventional search activities with these new techniques came under examination. The conclusion is inescapable that MEDLARS adds a powerful new tool to the armamentarium of the reference librarian, but by no means supplants all the other available tools. The conclusion was also inescapable that although many of the skills and knowledges of the literature researcher stand him in good stead in learning these new techniques, there is also a new range of skills and techniques in relation to the machine system which he must acquire before he can use it skillfully. In view of the necessity for close coordination between machine and conventional search, a close working relationship was established between the Search Section of the Bibliographic Services Division and the Reference Section. Reference inquiries designated for mixed machine and conventional search were mediated between both sections by a member of the Reference Section designated as MEDLARS search coordinator. In addition three members of the Section participated in indexing training which provides an important basis for machine search training. The entire Section also heard a series of discussions of machine search procedures and strategies, in order to be able to participate more actively in mixed searches. Over 120 mixed searches were processed by the Reference Section under this arrangement.

Reference Policies. Further efforts to establish a coordinated policy on machine and conventional literature searching were based on a series of meetings between supervisory personnel from both Bibliographic Services Division and Reference Services Division. In the process the general service policy of the Reference Section was brought under scrutiny, with the result that policies were revised to bring them more into conformity with the Library's purpose of providing support for the nation's medical libraries rather than substituting for their services. The decision was made that the Reference Section would direct its energy more toward projects which tend to serve large portions of the biomedical community rather than serving individuals, particularly those individuals located in areas where medical library service is available.

A major project of this kind of wider utility was represented by the work many of the members of the Section did this year on the revision of the Bibliography of the Handbook of Medical Library Practice. Under study also was the development of a central repository of information about biomedical bibliographies in published and unpublished form and also in process. Among the more useful bibliographies prepared by the Section was Mrs. Marjorie Wright's annotated Selected Basic Science Books in the Reference Collection of the National Library of Medicine.

LOAN AND STACK SECTION

The increase in interlibrary loan requests filled this year was 18,003 over requests filled in 1964, for a new high of 148,558, or an

increase of 13.8%. This represents a reversal of the trend in 1964 in which 4,463 fewer requests were filled than in the previous peak year. The total number of requests received for both interlibrary loan and for service to readers increased by exactly 20,000 over 1964. The total number of requests filled, however, only increased by 15,586. The deficit is represented in the larger number of items which were reported as unavailable. While the percentage of requests unfilled rose from 12.2% in 1964 to 13% in 1965, the percentage of non-available rose from 9.8% in 1964 to 12.5% in 1965. This loss of service was felt primarily in readers services where non-availables increased from 5.1% of the total to 10.6%, rather than in interlibrary loans where the increase in non-availables was 13.5% as compared to 12.9% the preceding year. The decrease in number of interlibrary loan requests rejected for one reason or another from 5,973 in 1964 to 1,218 in 1965 accounts in some small measure for the increase in the unavailable rate, but more convincing reasons must be sought elsewhere. The fact that this record of unavailability of items on requests compares favorably with that of many other research libraries in the country is, of course, no reason for complacency. It results in part from the fact that the Library's collection is subject to three competing uses: 1) the bibliographic, i.e., indexing, 2) interlibrary loan use, and 3) use by the staff and readers.

Interlibrary Loan Request Form. The adoption of the American Library Association Interlibrary Loan Request Form has proved largely successful. At present not more than 1% of the requests are received on the old NLM form. Considerable difficulty is still experienced, however, with smaller libraries which have long been accustomed to receiving free supplies of forms from the NLM, and which continue, in spite of our notices, to ask for additional supplies. A generous distribution of the forms has been continued, particularly to foreign libraries. Most libraries, however, have cooperated very well by procuring their own supplies of forms, and many have shown initiative in arranging for the loan forms to be copied by printers in their own countries. Because clear, uniform citations are a great help in processing the large number of forms which the Section receives, considerable effort has been expended in educating librarians in the necessity of correct form of citation. This attempt has been most rewarding and has resulted in a large increase in standardized citations which can be processed without the delay caused by the necessity for verification.

MEDLARS has had an impact in Loan and Stack procedures as well as elsewhere in the Library. To facilitate the handling of a group of computer produced citations printed on 3 x 5 cards, which were received in a recent special assignment, a mask was developed which permitted the cards to be reproduced on a 914 Xerox. The devised form is similar to the ALA form and offers most of its advantages. With the possibility of the increasing use of such computer printouts, this technique may become increasingly important.

Loan Policy. To forestall the most common problems of misunderstanding of the Library's loan policy, the policy statement was revised to read that the Library does not supply reprints, that loans are made in accordance with the provisions of the General Interlibrary Loan Code, that multiple copies of material are not furnished, that complete issues or volumes are not copied, that citation elements must follow the directions on the loan form, and that for paid orders the requester must secure the permission of the publisher if any possibility of copyright violation exists. Because the Library was receiving a large number of urgent requests for extensions on the loan periods of original material, it was decided that the loan system would be more effective if renewals were permitted. Before the change was made final, records were kept of two months' renewals; of the 41 volumes renewed there was only one case in which a second request was made for a loan which had been renewed.

The provision of Kalvar duplicate microfilms has permitted the loan of filmed materials, a service which was impossible when the Library held only unique, archival copies of its films. While the present supply of Kalvar film is too small to provide any considerable number of loans, several requests for materials which would otherwise have been unavailable or extremely expensive were filled in this manner. As the film file grows, this type of loan will become increasingly important.

Through-Put Time for Loan Requests. Several months were spent in a study of through-put time of loan requests. This survey was conducted by attaching route slips to from 5 to 15 requests chosen at random each day. Route slips were checked for the time that requests were received in the Section, reviewed, searched, filmed, and sent to the mail room or returned, if unavailable. One result of the survey was to show that approximately 75% of the requests which pass the sorting desk are found on the first search. In the initial check conducted from December through February it was found that the group of requests requiring only one search averaged 29 hours and 47 minutes from receipt to mailroom, that requests requiring extended search averaged 53 hours and 10 minutes, and that non-availables averaged 45 hours and 8 minutes. The overall figure for the entire group was 34 hours and 53 minutes.

Subsequently, a joint attempt was made by Loan and Stack and Photoduplication Section to improve through-put time by rescheduling the search of slips in smaller batches and cutting in half the size of film rolls. Since Loan and Stack's part of this effort resulted in a gain of only one and a half hours and decreased the time available to the staff for duties other than searching requests, the change was not adopted.

Stack Maintenance. An estimated 15,000 unsorted theses, many of them brought from the old library building, were sorted and filed in a University/author arrangement to provide some level of accessibility.

There are now three main groups of theses: an older uncataloged group arranged by university, date and author, a cataloged group, and the new group in university and author order.

Other improvements of the stacks include the numbering of the ranges on each level in a uniform system and the preparation of the Guide to Collections which indicates location of special collections and the classes of the general collection by range number. The Guide has been issued as a booklet and has also been mounted and placed throughout the stacks for the guidance of the readers and staff; updated diagrams of the three stack levels have also been prepared to accompany the posted guides.

Systematic stack reading by a team of four persons has begun on B Level. In addition to correcting misshelving, the team removes items seriously in need of repair, rebinding, or filming. Where possible, checks are made of materials charged for more than six months and charges for items not found or items which can not be checked are mounted on blue cards for subsequent review and updating of records. A major stack maintenance task yet to be accomplished is the arrangement of newly cataloged titles on A Level, all of which have now been labeled by Preservation Section, by call number and the shifting of the A Level Collection to permit room for growth.

PRESERVATION SECTION

Microrecords Unit. The program of the Unit, already far from adequate to meet the pressing demands of the Library's poor paper problems, was further delayed during the year. Staff shortages and the increasing demands of the interlibrary loan program have seriously hampered the accomplishment of even the minimum filming goals achieved in previous years. A survey made in 1961 recommended filming of 6,000,000 pages within five years; a goal of at least a million pages a year was set and finally reached during FY 1964; in contrast, only 480,011 pages were completed in FY 1965. About 3 and a half million pages remain to be filmed.

Despite the discouraging progress in the poor paper program, considerable progress was made in production of service copies of the Library's silver film. Duplicate copies produced have been shelved in the stacks and even the limited quantity now available has been of considerable help in simplifying recovery of requested materials on film.

To systemize the selection of material for filming and to prevent destruction of volumes of archival or reference value, a new evaluation procedure has been developed. Titles are first examined by the Unit to determine the degree of deterioration, the holdings of other libraries shown in the Union List of Serials, and the availability of reprint or microfilm editions. This information is then forwarded to Reference

Services Division and History of Medicine Division which assign reference and archival ratings and may request retention of material in original paper. Filming priority is then determined mathematically from deterioration, rarity, reference, and archival ratings. The resulting information is entered on a card and filed in filming priority order.

Binding. Binding shipments for the year totaled 17,800 volumes, approximately the same figure as that of the year before. The contract was again awarded to Hertzberg-New Method; there was a 10¢ increase in new binding but all other charges remained the same.

A cut of \$2,500 plus \$800.00 for end sheets, not normally provided from binding funds, cancelled plans for binding second copies of journals after 200 had been completed. Because binding second copies will prevent excessive initial wear on archival copies and will also make Loan and Stacks Section's task of searching materials much easier, the project will be resumed once sufficient funds are available.

The adoption of the Hertzberg-New Method standardized lettering system has made it possible to dispense with the use of dummies in binding shipments. A similar scheme, based on Library Binding Institute standards, was adopted several years ago and later abandoned because it did not produce standard spine markings. Although some difficulty with the size of the type was experienced in the initial Hertzberg-New Method shipment, this has since been corrected and subsequent shipments have been satisfactory. Since the ultimate test of the use of such systems cannot be applied until there is a change of binders, all dummies are being saved. It is estimated that 64 man hours a month are being saved by the Library through use of this system.

Cataloging of all journals in the general A Level collection was completed in January. By March all sets on the level had been labelled. The level was later checked for mistakes and omissions.

A Planex binder which produces the type of glued book known as perfect binding was purchased for the Unit in October. This equipment, which can produce a glued spine for materials too thick for pamphlet binding and too large for perma-binds, provides the Library with a binding capability for theses, spiral bindings, computer print runs, and xeroxed publications which could formerly be achieved only by the much more expensive commercial bindings.

PHOTODUPLICATION SECTION

The past year in Photoduplication was one of investigation, testing, training and retraining. Interlibrary loan filming increased 8%. Film processing was added to routine operations. New and expanding

library programs created an unusually heavy demand for small print runs and demand copying service. The total for this activity alone amounted to over 258,000 units, an increase of 140%. Support of the investigations for the graphic image study required 800 man hours for testing and test recording of equipment and materials. The film duplication program was expanded. Regrettably since these added responsibilities and functions were not accompanied by corresponding personnel increases, the preservation and security filming program was seriously affected.

Film Processing. In September processing of phototypesetting film produced on the GRACE component of MEDLARS for Index Medicus and other recurring bibliographies was transferred from the Data Processing Division to the Photoduplication Service. Along with the transfer came an operator and such items as a Versamat Film Processor and related equipment including mixing and storage tanks and quality control instruments. Immediate steps were taken to train additional operators to handle the three week round-the-clock processing of the Cumulated Index Medicus film which began November 17.

Experimental processing of ILL microfilm using the phototypesetting chemistry began. The use of dye back microfilm was discontinued in favor of the antihalation type in order to eliminate a possible source of solution contamination. This decision created the need to develop new specifications for camera work and processing. By October, in house processing of ILL film became a reality with significant economic and systems gains. Among these gains were the elimination of an annual charge of \$1,500 for transportation of the film to and from a commercial laboratory, a reduction of \$700 in annual processing costs, a one day reduction of interlibrary loan throughput, and more rapid detection of camera malfunctions. The credit for this accomplishment is due in large part to the work of the NBS members of the NLM/NBS Graphic Image Study Team. From October 1964 through June 1965, the Section processed 14,700 feet of phototypesetting film and 100,000 feet of ILL microfilm. Archival quality film for the film files is still being processed by a commercial laboratory.

Film Duplication. A borrowed Kalvar film duplicator has permitted considerable progress in production of service and sale copies of materials on film. Currently the Library owns 11,300 rolls of film excluding duplicate (service) copies. Included in this file are 1,425 reels of the old film file and about 600 reels of commercial serial titles. Eventually all but the commercial films will be duplicated for service needs with the master retired for duplicating and security purposes. Last year 957 rolls were duplicated on Kalvar for the service copy file and 14 rolls were duplicated for sale. The service copy file now includes 2,925 rolls of Kalvar and Diazo films. Excluding films available from commercial sources and the old film file, about 6,900 rolls of master film are scheduled for duplication in the near future.

Facilities and Equipment. Approximately 450 square feet of space used for filming of poor paper were reassigned to the Bibliographic Services Division. The filming operation was moved into an adjacent area formerly used to store the film collection. A heavy duty power supply system was installed in the new filming area and the adjoining work area used for the photoclerk, film duplication and quality control operations. The awkward triple curtained entrance to the film processing darkroom was replaced by a modern revolving light trap doorway. Possibly the most important accession was a sensitometer for evaluating film emulsion characteristics and film processing techniques.

Film Deterioration. During FY 1964, 210 rolls of film selected from the 9,000 film bank were inspected for blemishes. The results were sent to the National Bureau of Standards for incorporation into a government-wide study of this problem. During the past year, 60 rolls from this sample were re-evaluated under somewhat different criteria. The results of the government-wide study have been incorporated into NBS Technical Comment 261, Summary of Current Research in Archival Microfilm. The report supports neither those who are ready to push the panic button nor the uncritical enthusiasts for microforms. Currently, NLM microform storage methods and facilities do not meet the standards proposed in the Technical Comment. Plans and recommendations for corrective action will be included in the Task Force report.

AWARDS

Four members of the staff were honored at Awards Ceremonies during the year.

Superior Work Performance. Mr. Thomas R. Cassidy, Head of the Loan and Stack Section received a cash award for superior work performance. In addition to his regular duties, Mr. Cassidy served as Acting Head of the Preservation Section during the period from October 1963 to November 1964. He was cited for supervising both units in an exemplary fashion. Miss Louise Goins of the Photoduplication Section was cited for having assumed complete responsibility for mailing library materials requested through the Interlibrary Loan Service (an average of 500 requests per day with peak loads up to 1,000 per day), thereby making it a one-man operation.

Beneficial Suggestions. Mrs. Pearl L. Cardwell of the Photoduplication Section suggested the installation of visors on the mobile cameras to relieve operators of discomfort caused by glare produced by the cameras' high intensity lights. Mr. James A. Keeling of the Reference Section suggested a new method of labelling wooden book dummies, thus improving the appearance of shelves in the public areas.

CHAPTER SEVEN

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

At the Hearings on Appropriation for fiscal year 1965 in the House of Representatives, the Library upon request submitted a "Program of Research in the History of Medicine." This program plan called in part for the recruitment of personnel "(1) for the purpose of cataloging its present collections within 5 years, (2) for the purpose of establishing and maintaining an active program for the acquisition and cataloging of manuscript materials, (3) for the purpose of compiling critical bibliographies and special bibliographic information files necessary to the utilization of the collections by scholars and scientists." This program was to be administered by the Chief, History of Medicine Division. The budget presented for this part of the program called for 9 positions. The House Appropriations Committee reported favorably upon this program, and the sums and positions requested were in time appropriated by the Congress. This specific and favorable recognition of the history of medicine was of course most heartening to HMD. This report will examine first what has been accomplished under this program.

PROGRAM IN HISTORY OF MEDICINE

Personnel. HMD ended the previous fiscal year with a staff of 13 out of an authorized total of 14 positions. During the year 3 new professional members were added to the staff but 1 clerk-typist resigned, for a net gain of 2. Further recruitment was not permitted until late in the year, when HMD was authorized to replace the clerk-typist. Loss of 1 professional by transfer to another government agency prior to the new clerk-typist's entry on duty meant that in fact the total personnel of HMD during the fiscal year 1965 at no time exceeded 15.

Cataloging. Steady progress has been made during the year on the preparation of a catalog of the Library's 16th century imprints. On March 31, the last edition was cataloged. In 28 months Mr. Richard J. Durling, Senior Cataloger, had processed some 4,800 editions. By June 30, 1965, shelf reading had been completed to insure the inclusion of all items, main entry cards had been serially numbered and tracings keyed to the serial numbers for added entries, and the index of printers and publishers compiled. The manuscript of the catalog will be ready for the printer in the fall of 1965.

Steady progress has also been made on the preparation of a catalog of the 17th century imprints. In this case, work has been speeded by addition to the staff of another cataloger. Altogether, the 2 catalogers now working on the 17th century, in a total of 30 man-months, have processed approximately 3,600 items. It is estimated that the ability to hire this additional staff member will make it possible to complete the 17th century catalog 2 to 3 years sooner than would otherwise have been the case.

The project for unifying records of 18th century imprints, described in the last annual report, has progressed at a satisfactory rate, in view of the fact that it has been possible to assign only 1 person to it, and that other duties have pre-empted 60 per cent of her time. The first phase, establishing the main entry only for about 20,000 items, is approximately one-third complete.

Manuscripts. The program plan for acquisition and cataloging of manuscript materials has proceeded along two distinct lines: one relating to early manuscripts, preceding the introduction of printing; the other to modern manuscripts - the correspondence, notebooks, and other papers of figures of the current scene or the recent past. In June, the first of two large microfilm orders placed during the year arrived from the Vatican Library, consisting of 31 reels containing a total of 113 early medical manuscripts. These will all be cataloged in due course and made available for the benefit of research scholars in this country. They will also be used on a specific research project which is being undertaken at the Library, namely, the preparation of the Galen article for the Catalogus Translationum et Commentariorum. Thus scholarly contributions are being combined with resource development.

The addition of 1 professional for the manuscripts activity has also made it possible to start cataloging the Library's existing collections of modern manuscripts, which heretofore has been largely unlisted.

Bibliography. The third part of the program plan for the history of medicine called for the preparation of critical bibliographies. The third new staff member added has therefore undertaken, first, the development of a program and procedures for preparation of an annual bibliography of literature relating to the history of medicine. Preliminary studies have provided data which indicate the approximate size of the literature and the varied sources which it will be necessary to examine for citations. These include a core list of approximately 110 journals in the history of medicine and science, only 11 of which are indexed for MEDLARS, and a list of approximately 59 serials in various subject specialties containing indexes, abstracts, or extensive lists of journal articles and books received. Both medical and non-medical sources must be examined, since much of the most valuable material is published in journals devoted to general historical, philological, or classical studies. In addition, the daily intake of monographs is scanned in the Technical Services Division, and a monthly recurring demand search from MEDLARS provides about 200 citations to biographical and historical material. Elimination of most current biographies and obituaries, together with a certain amount of trivia, cuts this figure substantially, and it is currently estimated that the total number of citations to be included in the bibliography will be about 2,500 per year. The first annual bibliography is scheduled to appear in the spring of 1966, covering material indexed in 1965.

ACQUISITIONS

During the past year the Library acquired, through funds provided by the Robert Tracy and Emma Wheat Gillmore bequest, a unique document of international interest. It is the notebook kept during the last ten years of his life by the great bibliographer, botanist, and physician of the 16th century, Konrad Gesner of Zurich. Gesner kept in close touch with the leading scientists of his day, and entertained many in his home. In this notebook is the record of these visits. It contains, in addition to about 80 notes in Gesner's own hand, the autographs of 227 of his guests. These include such well known names as John Dee and Leonhard Rauwolf, as well as a multitude of lesser figures. The Library's resources for the purchase of old and rare books are such that it is only through gifts or other special funds that it can hope to acquire such unique and valuable historical documents as this Gesner album.

The total number of early printed works added to the Library's collections during the year was 226, including 30 16th century imprints, 49 17th century imprints, 137 18th century imprints, and 10 Americana. Of this total, 25 were purchased with funds from the Gillmore Bequest, and 51 were received on exchange. For other gifts to the historical collections the Library is indebted to Dr. Stanhope Bayne-Jones, Ciba, Inc., Mr. and Mrs. Sydney Hamer, Dr. Saul Jarcho, and Dr. James P. Leake.

Among the more unusual items acquired were Galen's Methodi medendi, vel de morbis curandis libri XIII, Lyon, 1580, an edition not hitherto recorded in the standard bibliographies of this prolific author; and a 62-page work published in 1815 by a Charleston, S. C., physician of same note, which also is not recorded in Austin or other standard bibliographies.

REFERENCE AND CIRCULATION

During the past year there were 382 visits from readers using the History of Medicine Division. Together they charged out 1,103 items from the historical collections. Interlibrary loan use was 497 editions, for a combined circulation figure of 1,600 editions, which compares to a figure of 1,595 last year. This does not include staff use, or reading room use of reference material.

Major exhibits were prepared during the year on "The Historical Background of Blood Transfusion," and "Tobacco and Health." The first included works from both the historical and general collections, bringing the story up to World War II. The second was restricted to material from the early imprint collection.

ACQUISITION ACTIVITIES

	<u>1963</u>	<u>1964</u>	<u>1965</u>
<u>SEARCHING</u>			
Prospects considered for acquisition, not in Library	26,806	29,404	27,151
Prospects considered for acquisition, Library has	<u>11,912</u>	<u>15,468</u>	<u>21,470</u>
Total	38,718	44,962	48,621
<hr/>			
<u>ORDERS PLACED</u>	15,576	14,555	14,803
<u>SERIAL RECORD</u>			
New titles added	956	1,511	1,299
Titles currently received (as of end of year)	13,898*	15,358*	16,557*
<hr/>			
<u>PUBLICATIONS ADDED</u>			
Serial Pieces	67,832	71,323	77,406
Other	<u>16,151</u>	<u>19,782</u>	<u>13,405</u>
TOTAL PUBLICATIONS ADDED	83,983	91,105	90,811
<hr/>			
<u>OBLIGATIONS FOR PUBLICATIONS</u>	\$87,000	\$108,000	\$124,114
(Included for rare books)	11,873	14,007	12,234

* 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 1964</u>	<u>30 June 1965</u>
<u>BOOK MATERIAL</u>					
1. Bound Monographs					
a. HMD	256	1	255	35,154	35,409
b. 1801-1913	51	61	-10	88,453	88,443
c. 1914-	6,347	72	6,275	176,715	182,990
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Subtotal (1)	6,654	134	6,520	300,322	306,842
2. Bound Serials	<u>12,407</u>	<u>254</u>	<u>12,153</u>	<u>286,706</u>	<u>298,859</u>
Total Bound Volumes (1 + 2)	19,061	388	18,673	587,028	605,701
3. Theses	35	0	35	285,116	285,151
4. Pamphlets	<u>28</u>	<u>0</u>	<u>28</u>	<u>167,548</u>	<u>167,576</u>
Subtotal (3 + 4)	<u>63</u>	<u>0</u>	<u>63</u>	<u>452,664</u>	<u>452,727</u>
TOTAL BOOK MATERIAL	19,124	388	18,736	1,039,692	1,058,428
<u>NON-BOOK MATERIAL</u>					
1. Microfilms	839	0	839	3,311	4,150
2. Portraits and Pictures	<u>309</u>	<u>0</u>	<u>309</u>	<u>58,932</u>	<u>59,241</u>
TOTAL NON-BOOK MATERIAL	1,148	0	1,148	62,243	63,391
<u>BOUND EQUIVALENTS</u>				<u>15,000</u>	<u>15,000</u>
<u>GRAND TOTAL</u>	20,272	388	19,884	1,116,935	1,136,819

CATALOGING STATISTICS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
<u>COMPLETED CATALOGING</u>			
New Titles	11,090	11,326	10,174
Recataloged Titles	4,183	2,831	4,742
TOTAL	<u>15,273</u>	<u>14,157</u>	<u>14,916</u>
Volumes Reclassified and/or Transferred	3,797	873	2,125
Catalog Cards Filed	90,879	102,871	163,203
Volumes Shelved	49,300	99,841	53,697
Volumes Withdrawn	630	360	387

NATIONAL LIBRARY OF MEDICINE CATALOG
(Annual)

	<u>1962</u>	<u>1963</u>	<u>1964</u>
<u>NUMBER OF ENTRIES</u>			
Main	15,592	11,592	12,832
Added	4,495	4,566	6,112
Name cross-references	3,706	2,856	4,212

REFERENCE SERVICES

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Requests by telephone	7,048	9,866	9,810
Government	(4,435)	(5,641)	(5,621)
Non-Government	(2,613)	(4,225)	(4,189)
Requests by mail	1,288	1,592	2,077
Government	(151)	(204)	(274)
Non-Government	(1,137)	(1,388)	(1,803)
Readers assisted	5,082	8,696	9,044
Government	(1,518)	(3,364)	(3,650)
Non-Government	(3,564)	(5,332)	(5,394)
Total	13,418	20,154	20,931
Government	(6,104)	(9,209)	(9,545)
Non-Government	(7,314)	(10,945)	(11,386)
Readers counted	21,484	26,133	26,779

BINDING STATISTICS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Volumes sent to binder	13,630	17,340	17,800
Volumes returned from binder and processed	11,440	16,933	18,328
New volumes	(9,468)	(12,933)	(14,480)
Rebinds	(1,972)	(4,000)	(3,848)
Volumes bound at NLM	2,374	2,807	3,425
Volumes repaired at NLM	785	2,513	4,138
Volumes and pieces lettered	33,519	66,546	41,037
Pictures mounted	54	199	82

CIRCULATION STATISTICS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Requests received	233,647	243,464	263,464
Requests filled	205,709	213,711	229,297
Requests unfilled	27,938	29,753	34,167
Rejected	(4,692)	(5,973)	(1,218)
Unavailable	(23,246)	(23,780)	(32,949)
Percentage of Requests filled	88.0	87.7	87.0

ITEMS USED, BY MAJOR CATEGORY

Readers' requests in Library	70,791	83,156	80,739
Interlibrary loans	134,918	130,555	148,558
Photocopy	(128,399)	(124,569)	(142,452)
Original-			
Government	(3,282)	(3,164)	(3,350)
Non-Government	(3,237)	(2,822)	(2,756)

UNAVAILABLES

	By percentage of total <u>unavailables</u>			By percentage of total <u>requests accepted</u>	
	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1964</u>	<u>1965</u>
Already on loan	8.9	9.6	8.4	0.9	1.1
Not in collection	30.4	32.2	29.8	3.2	3.7
At bindery	26.4	21.0	20.0	2.2	2.4
Missing	15.0	13.4	22.8	1.3	2.8
Does not circulate	7.4	9.4	5.1	0.9	.6
Not identified	5.0	3.5	4.4	0.4	.6
In process	6.9	10.9	9.5	1.1	1.2
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>10.0</u>	<u>12.4</u>

PHOTOGRAPHIC SERVICES

TABLE I - EXTERNAL ORDERS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
<u>EXTERNAL ORDERS COMPLETED</u>	130,290	126,327	143,374
By type of order:			
Interlibrary loan	(128,399)	(124,569)	(142,452)
Coupon, paid, special	(1,891)	(1,758)	(922)
By type of service:			
Microfilm	(161)	(23)	(33)
CopyFlo	(126,812)	(124,121)	(140,093)
Photostat	(685)	(567)	(722)
Xerox 914 Copier	(2,017)	(1,184)	(1,969)
Photoprints	(230)	(289)	(423)
Photographs and slides	(385)	(143)	(134)

PAGES DUPLICATED FOR ORDERS

Microfilm:	2,296,620	1,940,104	2,094,823
For CopyFlo orders	(2,284,401)	(1,934,490)	(2,084,074)
For microfilm orders	(12,219)	(5,614)	(10,749)
CopyFlo (from film file)	5,583	9,451	13,948
Photostat	3,564	3,282	3,250
Xerox 914 Copier	17,996	11,257	17,919
Photoprints	2,220	2,415	3,073
Photographs and slides	659	604	933
	<hr/>	<hr/>	<hr/>
Total	2,326,642	1,967,113	2,133,946

CARDS

Microfilm	0	2,805	0
CopyFlo	<u>27</u>	<u>2,805</u>	<u>0</u>
Total	27	5,610	0

PHOTOGRAPHIC SERVICES

TABLE II - INTERNAL ORDERS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Microfilm pages	919,029	1,297,876	729,235
For film file	(80,764)*	(228,321)	212,498
For poor paper program	(821,989)	(1,062,433)	480,011
For interoffice orders	(16,276)	(7,122)	36,726
Paper reproduction pages	141,332	107,376	258,212
Photostat	(844)	(476)	696
CopyFlo	(43,702)	(20,782)	51,542
Photoprints	(12)	(58)	8
Xerox 914 Copier	(96,774)	(86,060)	205,966
Photographs and slides	1,887	1,551	2,471
Cards - Microfilm	185,319	144,825	137,236
- CopyFlo	276,704	146,080	125,621

TABLE III - TOTAL PRODUCTION

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Microfilm pages	3,215,649	3,237,980	2,824,058
CopyFlo pages	2,333,686	1,964,723	2,119,564
Photostat pages	4,408	3,758	3,946
Xerox 914 Copier	114,770	97,317	223,885
Photoprints	2,232	2,473	3,081
Photographs and slides	2,546	2,155	3,404
Cards - Microfilm	185,319	147,630	137,236
- CopyFlo	276,731	148,885	125,621

TABLE IV - ORDERS COMPLETED AS INTERLIBRARY LOANS

	<u>1965</u>		
	<u>Government</u>	<u>Non-Government</u>	<u>Total</u>
Metropolitan Washington	16,634	11,017	27,651
Outside Washington (U.S.A.)	24,696	66,390	91,086
Overseas	<u>5,944</u>	<u>17,771</u>	<u>23,715</u>
Total	47,274	95,178	142,452

*History of Medicine Division

HISTORY OF MEDICINE DIVISION

<u>ACQUISITION</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Editions searched	3,482	4,565	2,222
Editions recommended for purchase	455	553	430
Editions added to collection	300	452	226
In book form	(297)	(452)	(226)
In microfilm	(3)	(0)	(0)
<hr/>			
<u>CATALOGING</u>			
Editions cataloged	1,217	2,305	2,149
Card mats produced	368	3,111	4,680
Catalog cards filed	5,231	15,683	53,746
<hr/>			
<u>REFERENCE</u>			
Readers	176	342	382
Interlibrary loan and Photoduplication orders	426	484	497
Original material loaned	(179)	(217)	(227)
Photocopies	(247)	(267)	(270)
<hr/>			
<u>PAGES FILMED</u>			
For special orders	4,376	4,041	9,609
For security	77,091	198,729	205,511
For acquisition	<u>0</u>	<u>0</u>	<u>0</u>
	81,467	202,770	215,120
<hr/>			
<u>PRINTS AND PHOTOGRAPHS</u>			
Items added to collection	876	593	298
Reference use of material (total of pictures supplied)	713	980	1,090
Reference questions answered	226	281	196

INDEX MEDICUS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
<u>DISTRIBUTION</u>			
Paid subscriptions, United States and foreign	4,238	3,755	4,888
Gift and Exchange	1,690	1,651	575
GPO single copy sales and stock	1,154	1,697	1,219
Depository libraries	308	377	421
NLM internal use and stock	<u>110</u>	<u>120</u>	<u>110</u>
Total distribution	7,500	7,600	7,213
<hr/>			
<u>JOURNAL TITLES INDEXED</u>	2,244	2,299	2,441
<u>CITATIONS PUBLISHED</u>	139,462	133,413	156,783

INDEX MEDICUS

SCHEDULE OF COMPLETED ISSUES

<u>Issue</u>	<u>1964</u>		<u>1965</u>	
	<u>Number of Items</u>	<u>Date Shipped to Printer</u>	<u>Number of Items</u>	<u>Date Shipped to Printer</u>
<u>Vol. 4, Nos. 7-12</u>			<u>Vol. 5, Nos. 7-12</u>	
July	14,032	June 11	13,756	June 17
August	10,000	July 15	13,733	July 10
September	11,364	Aug. 12	14,209	August 10
October	9,241	Sept. 12	12,574	Sept. 10
November	9,903	Oct. 10	12,370	Oct. 12
December	13,070	Nov. 10	12,773	Nov. 6
<u>Vol. 5, Nos. 1-6</u>			<u>Vol. 6, Nos. 1-6</u>	
January	5,121	Dec. 12	14,665	Dec. 14
February	7,762	Jan. 15	9,524	Jan. 11
March	11,074	Feb. 12	10,167	Feb. 9
April	13,040	Mar. 12	13,830	March 8
May	13,878	Apr. 10	14,066	April 9
June	<u>14,928</u>	May 12	<u>15,116</u>	May 10
TOTAL	133,413		156,783	

COMPUTER UTILIZATION

	<u>1964</u>	<u>1965</u>
Production	873:17	2,182:05
Program Checkout	1,499:37	1,374:48
System Testing	190:54	45:06
Training and Demonstration	24:01	:00
Use By Other Agencies	9:20	20:59
Lost Time	<u>15:30</u>	<u>15:12</u>
Total Use (in hours and minutes)	2,612:39	3,638:10

Downtime	32:55	30:45
Uptime	98.8%	99.2%

PERSONNEL STATISTICS

TABLE I - PERSONNEL ACTIONS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
Personnel authorized	242	268	291
Personnel on duty	240	259	269
Average number of persons employed	227	247	269

PERSONNEL ON DUTY

Office of the Director	32	41	40
Extramural Program	8	9	13
Research and Training Division	-	(3)	(3)
Publications and Translations Division	-	(6)	(1.0)
Intramural Program	200	209	256
Bibliographic Services Division	(60)	(29)	(32)
Data Processing Division	-	(37)	(41)
History of Medicine Division	(12)	(13)	(15)
Reference Services Division	(68)	(70)	(69)
Technical Services Division	(60)	(60)	(59)

	240	259	269
--	-----	-----	-----

TABLE II - PERSONNEL ACTIONS

	<u>1963</u>	<u>1964</u>	<u>1965</u>
<u>ACCESSIONS</u>	89	65	74
Career Conditional	(29)	(18)	(24)
Temporary	(37)	(27)	(22)
Reinstatements	(8)	(2)	(5)
Transfers (to NLM)	(14)	(17)	(21)
Commissioned Officers	(1)	(1)	(2)
<u>LOSSES</u>	60	48	65
Resignations	(29)	(21)	(39)
Expiration of Appointments	(2)	(5)	(3)
Transfers	(23)	(18)	(16)
Separations	(1)	(1)	(0)
Retirements	(2)	(1)	(6)
Deaths	(3)	(0)	(0)
Commissioned Officers	(0)	(2)	(0)
<u>CONVERSION TO CAREER-CONDITIONAL, CAREER</u>	15	17	17
<u>PROMOTIONS</u>	76	65	70
<u>REASSIGNMENTS</u>	46	57	31
<u>CHANGE TO LOWER GRADE</u>		0	0
<u>PAY ADJUSTMENTS</u>		7	39

FINANCIAL STATISTICS
OBLIGATIONS

	<u>FY 1963</u>	<u>FY 1964</u>	<u>FY 1965</u>
Appropriation: National Library of Medicine			
11 - Personnel Compensation	\$1,392,517	\$1,630,995	\$1,980,211
12 - Personnel Benefits	106,311	115,102	151,656
21 - Travel	20,116	33,068	35,656
22 - Transportation of things	4,300	2,547	3,142
23 - Rent, Communications and Utilities:	120,733	178,675	114,820
24 - Printing, Binding, and Reproduction	103,257	134,038	163,835
25 - Other Services	1,265,043	991,865	1,139,182
26 - Supplies and Materials	66,688	81,149	87,253
31 - Equipment (Literature)	241,688 (89,449)	880,081 (104,778)	164,803 (125,244)
41 Grants	5,579	...	119,897
Appropriation Transfer to LC	8,000	8,000	8,000
TOTAL OBLIGATIONS	3,334,232	4,055,520	3,968,455
Appropriation: Buildings and Facilities (Repair and Improvements)	46,430
Appropriation: Scientific Activities Overseas (Foreign Currency)			
Transfer to NSF	537,760	556,800	577,200
Direct Obligations	4,300	10,380	7,817
Total	542,060	567,180	585,017
Collections for photoduplication services (Funds revert to Treasury)	2,304	1,807	2,004
Allotment, Agency for International Development	15,900

FINANCIAL STATISTICS
RESOURCES

Appropriation: National Library of Medicine	3,892,000
Supplemental Appropriation	<u>66,000</u>
Total Appropriations	<u>3,958,000</u>
Reimbursements to Appropriation	<u>28,991</u>
Total, National Library of Medicine	<u>3,986,991</u>
Appropriation: Buildings and Facilities (Repairs and Improvements)	55,000
Appropriation: Scientific Activities Overseas	
India	61,926
Israel	136,620
Poland	413,700
Yugoslavia	88,000
Allotment from Agency for International Development	22,500

PUBLICATIONS

Bibliography of Medical Reviews. Volume 10, Washington, 1965. 191 p.
(Government Printing Office: \$1.25)

Bibliography on Sarcoidosis, 1878-1963. 1964. 229 p. Public Health
Service Publication No. 1213 (Bibliography Series No. 51)

Bibliography on Smoking and Health. Supplement 1963-64. PHS Pub.
No. 1124 (PHS Bibliography Series No. 45). Washington, April 1965.
29 p.

Facts About the National Library of Medicine. Washington, January 1965.
8 p.

Index Medicus. (Monthly) (Government Printing Office: annual subscrip-
tion, \$40 domestic; \$49 foreign)

List of Journals Indexed in Index Medicus. Washington, January 1965. 77 p.

Medical Subject Headings. Main Headings and Cross References Used in
Index Medicus and National Library of Medicine Catalog. Part 2 of
Volume 6, Number 1, January 1965. 331 p. (Government Printing
Office: \$2.50)

The MEDLARS Story at the National Library of Medicine. 1963. Reprinted
1965. 74 p.

National Library of Medicine Annual Report for the Fiscal Year 1964.
April 7, 1965. 63 p. (Multilithed)

National Library of Medicine Catalog, 1964. Washington, Library of
Congress, 1965. \$20.50

National Library of Medicine News. (Monthly)

Notes for Medical Catalogers. Vol. 1 No. 1 (issued irregularly).
Bethesda, April 1965.

Organization and Functions of the National Library of Medicine.
Washington, August 1964. 3-fold leaflet.

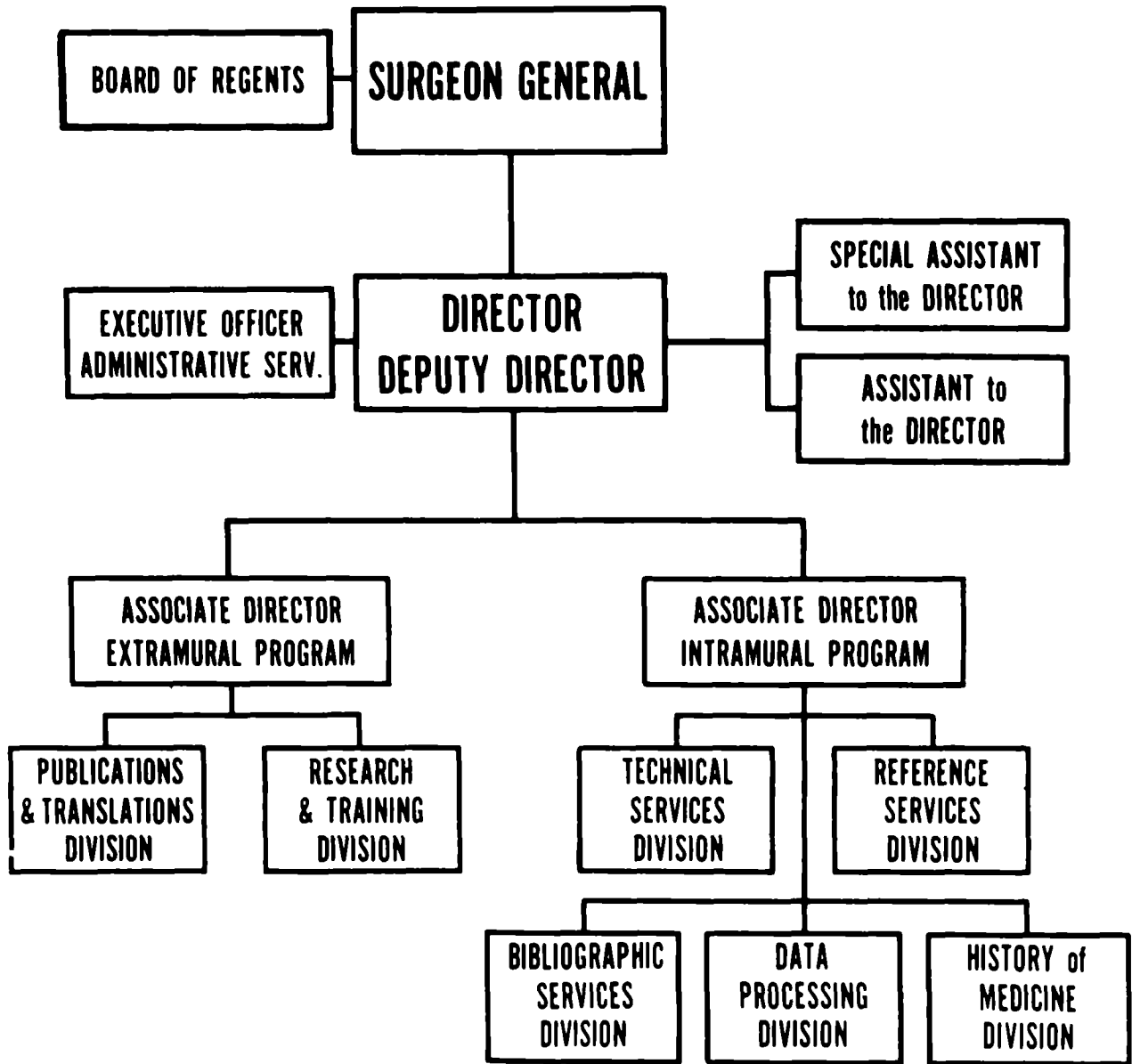
Adams, Scott and Sewell, Winifred. Indexing the Dental Literature; MEDLARS.
Proceedings, International Conference on Journalism, San Francisco,
Calif. Nov. 6, 1964, pp. 50-56.

Adams, Scott, MEDLARS, Performance, Problems, Possibilities. Bulletin of
the Medical Library Association, April, 1965.

- Adams, Scott. The Scientific Revolution and the Research Library. Library Resources and Technical Services, Spring, 1965.
- Austin, C. J. The Computer and Medical Bibliography. Military Medicine, Vol. 129, No. 8, pp. 737-741, 1964.
- Austin, C. J. The MEDLARS Project at the National Library of Medicine, Library Resources and Technical Services, Vol. 9, No. 1, pp. 94-99, 1965.
- Austin, C. J. The MEDLARS System. Datamation, Vol. 10, No. 12, pp. 28-31, 1964.
- Blake, John B. The Fielding H. Garrison Lecture: Women and Medicine in Ante-Bellum America. Bull. Hist. Med. 39:99-123, 1965.
- Blake, John B. Yellow Jack in Boston. New England Galaxy. 6(2): 19-26, 1964.
- Brann, Henry W. C. G. Jung and Schopenhauer. Jahrbuch for 1965.
- Cummings, Martin M. A Library-Based Computer System for Indexing, Storing, and Retrieving Literature in the Cardiovascular Field. Annals of the New York Academy of Sciences, Vol. 126, Article #2, August 6, 1965.
- Cummings, Martin M. Scope and Services of the U. S. National Library of Medicine. Israel Journal of Medical Science. January 1965.
- Durling, Richard J. Some Unrecorded Verses in Praise of Robert Fludd and William Harvey. Med. Hist. 8:279-281, 1964.
- Herman, Yaye F. The Comparison of the 1-C¹⁴-Glucose and 6-C¹⁴-Glucose Metabolism of Reticulocyte-Rich and Reticulocyte-Poor Human Red Blood Cells. Metabolism, April 1965.
- Karel, Leonard; Austin, Charles J.; Cummings, Martin M. Computerized Bibliographic Services for Biomedicine. Science 148:766-772, May 1965.
- Karel, Leonard. Earned Degrees in the Fields of Medicine. 1901-1962 - with Projections to 2000. J. Med. Educ. 40:455-471, No. 5 (1965).
- Karel, Leonard. Comparisons of Earned Degrees Awarded 1901-1962 - with Projections to 2000. National Science Foundation. Washington, D.C. (NSF 64-2, January 1964).
- Kronick, David A. Varieties of Information Requests in a Medical Library. Bull. Med. Libr. Assn. 52:652-69, October 1964.
- Kronick, David A. (Project Director) Guidelines for Medical School Libraries. Prepared by a Joint Committee of the Association of American Medical Colleges and the Medical Library Association. J. Med. Educ. 40 (1, pt. 1): 5-64, January 1965.

- Newburn, L. Robert. comp. Epidemiology of Selected Dental Conditions. 1950-1963. Ed. by Maynard K. Hine. Indianapolis International Dental Federation. Special Commission on Oral and Dental Statistics. 1964. 124 p.
- Olch, Peter D. Medical Subject Headings (MeSH) Proceedings AMA Workshop on Biomedical Vocabulary Control. October 1964.
- Roe, Joseph H. Jr., M.D. and Cassidy, Thomas R. The Interlibrary Loan Service of the National Library of Medicine. College and Research Libraries. 52: 45-48, January 1965.
- Taniguchi, Mayumi. An Analysis of Japanese Medical Periodicals. MLA Bulletin 1:34-51 (Jan. 1965). (Miss Taniguchi is now with the Library of Congress.)
- Weiss, I. J. Electronic Information Processing in a Modern Library. Conference Preprint 182, American Society of Civil Engineers, Water Resources Engineering Conference, Mobile, Alabama, 1965.

NATIONAL LIBRARY OF MEDICINE



June 30, 1965