

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

Fiscal Year 1964

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

ERRATUM

Please note that page 23 follows page 24 in this copy

NATIONAL LIBRARY OF MEDICINE

ANNUAL REPORT

for the

FISCAL YEAR 1964

April 7, 1965

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KEY PERSONNEL OF THE NATIONAL LIBRARY OF MEDICINE

June 30, 1964

OFFICE OF THE DIRECTOR

Director	Dr. Martin M. Cummings
Deputy Director	Mr. Scott Adams
Assistant to the Director	Mr. M. Daniel Bailey
Executive Officer	Mr. Ray W. Grim
Assistant Executive Officer	Mr. John P. Spain
Administrative Officer	Mr. James D. Lawrence
Personnel Management Specialist	Miss Donna C. Aldridge
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
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Research and Training Division

Chief	Dr. Carl D. Douglass
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INTRAMURAL PROGRAMS

Associate Director for Intramural Programs	(Vacancy)
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Bibliographic Services Division

Chief	Dr. Leonard Karel
Deputy Chief	Miss Winifred Sewell
Head, Index Unit	Mr. Constantine J. Gillespie
Acting Head, Search Unit	Mr. Christof N. Schubert

Data Processing Division

Chief	Mr. Charles J. Austin
Computer Systems Analyst	Mr. Irvin J. Weiss
Head, Input Section	Mrs. Audrey L. Milner
Head, Operations Section	Mr. Daniel Belsole
Head, Programming Section	Mr. Frank E. Booth

History of Medicine Division

Chief	Dr. John B. Blake
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Reference Services Division

Acting Chief

Head, Loan and Stack Section
Head, Photoduplication Section
Head, Preservation Section
Head, Reference Section

Mr. Edward A. Miller
Mr. Thomas R. Cassidy
Mr. Svend A. Andersen
(Vacancy)
Mr. Charles A. Roos

Technical Services Division

Chief

Assistant to the Chief
Head, Acquisitions Section
Head, Catalog Section
Head, Catalog Maintenance Section
Head, Selection and Searching Section

Mr. Samuel Lazerow
Dr. Robert F. Clarke
Miss Elizabeth Sawyers
Miss Emilie V. Wiggins
Mrs. Marian B. Abbott
Mr. Leslie K. Falk

FOREWORD

Fiscal Year 1964 was a year of reorientation and intensive activity at the National Library of Medicine. Changes and developments of far-reaching consequence to the Library, and to the American medical community which it serves, were effected.

By law, required to "assist the advancement of medical and related sciences, and to aid the dissemination and exchange of scientific and other information important to the progress of medicine and to the public health"; by tradition, dedicated to a duality of purpose -- the collection of the world's medical literature and its bibliographic control; by establishment, one of a triad of national libraries; and by forces of contemporary change, projected into a leading role in the solution of problems of scientific communication, the National Library of Medicine succeeded in defining new goals and making substantial progress toward them. The year was one of innovation, discovery, challenge, and response.

In the course of Fiscal Year 1964 the following notable events and actions took place.

First, Dr. Frank Bradway Rogers, Director of the National Library of Medicine since 1949, retired on August 31, 1963, and was replaced by Dr. Martin Marc Cummings on January 1, 1964.

Second, MEDLARS (Medical Literature Analysis and Retrieval System) became operational, and was first used to produce the Index Medicus for January 1964.

Third, the Library renewed and revitalized its relationships to the worlds of contemporary medical research and education.

Fourth, the Library gave primary attention to the development of an extramural program, strengthening its staff and developing plans and programs to meet its broad responsibilities for the welfare of medical libraries throughout the nation.

Fifth, the Library responded successfully to ever-increasing demands for services.

These and other aspects of the Library's activities are described at greater length in the report which follows.

Underlying all of these developments is a consciousness that the Library's mission must be reinterpreted if it is to respond meaningfully to the requirements of medicine in the twentieth century. The revolution in biological and medical research, the vigor of interdisciplinary movement in the sciences, the thrust of new educational philosophies, the onrush of new communication technology, and increasing attention given to the communication functions promoting the nation's health by the makers of public policy have constituted an unprecedented challenge to the National Library of Medicine. This report is an account of the Library's response to this challenge for the year beginning July 1, 1963, and ending June 30, 1964.

CHAPTER ONE

OFFICE OF THE DIRECTOR

DR. FRANK B. ROGERS RETIRES

Dr. Frank B. Rogers, Director of the Library for fifteen years, retired on August 31, 1963, to become Professor of Medical Bibliography and Librarian of the Denison Memorial Library at the University of Colorado Medical Center.

During his directorship the Library was developed and modernized extensively. Accomplishments during his period of service included:

The establishment of the National Library of Medicine in the Department of Health, Education, and Welfare.

The planning and completion of the new library building in Bethesda, Maryland.

The establishment of the MEDLARS system.

The development of the Index Medicus and the Current List of Medical Literature.

The Second International Congress on Medical Librarianship, held in Washington, June 1963.

On April 10, 1964, Dr. Rogers received from the Secretary of Health, Education, and Welfare, Anthony Celebrezze, a Distinguished Service Medal, the highest award of the Public Health Service, in recognition of his outstanding leadership and widespread contributions to the medical library profession.

DR. MARTIN M. CUMMINGS APPOINTED

Dr. Martin M. Cummings was appointed Director of the National Library of Medicine on January 1, 1964. Dr. Cummings previously was Associate Director for Research Grants and Chief of the Office of International Research of the National Institutes of Health.

Earlier he had been Professor and Chairman of the Department of Microbiology at the University of Oklahoma Medical School and Director of Research for the Veterans Administration.

SENIOR STAFF APPOINTMENTS

During the year the following senior staff appointments were made in the Library:

Marjorie P. Wilson, M.D., Associate Director for Extramural Programs
Mr. M. Daniel Bailey, Assistant to the Director
Leonard Karel, Ph.D., Chief, Bibliographic Services Division
Miss Mary E. Corning, Chief, Publications and Translations Division
Carl D. Douglass, Ph.D., Chief, Research and Training Division

BOARD OF REGENTS

Drs. Russell A. Dixon, Herman H. Fussler, William N. Hubbard, Jr., and Joseph H. McNinch, and Major General Richard L. Bohannon joined the Board of Regents during the year. The membership of the Board at the end of the fiscal year:

Major General Richard L. Bohannon (U. S. Air Force)
Dr. Norman Q. Brill (University of California, Los Angeles)
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. Hugh H. Hussey, Jr. (American Medical Association)
Dr. Saul Jarcho (New York City)
Rear Admiral Edward C. Kenney (U. S. Navy)
Dr. Joseph H. McNinch (Veterans Administration)
Dr. L. Quincy Mumford (Library of Congress)
Dr. Robert M. Stecher (Cleveland)
Dr. Luther L. Terry (U. S. Public Health Service)
Dr. William L. Valk (University of Kansas)

The Board met on December 13, 1963, and on March 20, 1964. At the December meeting Dr. Valk was elected Chairman, succeeding Dr. Warner L. Wells, whose term had expired in August. Dr. Norman Q. Brill was elected at the March meeting to become Chairman after August 1964.

The agenda for the December meeting included uses of the MEDLARS system, the Library's scope and coverage policy for its collections, and the disposition of the Gillmore Bequest. At the March meeting the Director presented an extensive report to the Board on the status of various intramural and extramural Library activities.

NLM ORGANIZATION

Following a ruling by the Comptroller General of the United States on March 3, 1964, to the effect that provisions of the Public Health Service Act could be employed to make grants for the support of biomedical communication activities, a new functional statement for the Library, reflecting the establishment of the Data Processing Division and the Library's expanded extramural activities, was approved March 18, 1964, by Dr. David E. Price, Acting Surgeon General of the Public Health Service.

The new statement reads as follows:

"The National Library of Medicine assists the advancement of medical and related sciences through (1) the collection, dissemination and exchange of information important to the progress of medicine and public health, and (2) the provision of support for medical library development including assistance for resources and personnel necessary to serve the health programs and activities of nonprofit research and educational institutions.

"Office of the Director

"(1) Directs and coordinates Library activities, (2) advises the Surgeon General on PHS policy relating to the management and control of published scientific information, (3) studies, identifies and defines needs in biomedical communications, (4) provides the secretariat for the NLM Board of Regents, and (5) provides overall management and administrative services for the Library.

"Technical Services Division

"(1) Recommends policy on scope and coverage of the collection, (2) acquires and catalogs materials for the collections, and (3) develops and maintains national and international publication exchange relationships.

"Reference Services Division

"(1) Provides reference research services, assistance and facilities, (2) prepares bibliographical publications on special subjects, (3) administers the interlibrary loan program, (4) maintains, circulates, and preserves the Library's collection, and (5) provides photographic and photocopying services.

"Bibliographic Services Division

"(1) Analyzes and indexes for publication the literature of medicine and allied sciences, (2) develops and maintains the medical subject heading authority list, (3) analyzes and prepares requests for special bibliographies for computer processing, and (4) prepares abstracts of articles in special subject fields.

"Data Processing Division

"(1) Performs systems analyses, (2) develops and maintains computer programs, (3) converts raw data for computer processing, and (4) provides computer services including production of bibliographical publications, demand searches, and recurring bibliographies.

"History of Medicine Division

"(1) Acquires, organizes, and services the historical source materials of the Library, (2) contributes to historical studies by publishing catalogs, bibliographies, and other aids to medical-historical scholarship, and (3) collects, catalogs, and controls the pictorial materials of the Library including films, prints, photographs, slides, and paintings.

"Publications and Translations Division

"(1) Facilitates the utilization of recorded information by research scientists and health practitioners through the conduct of support programs including (a) the support of the publication of monographs, critical reviews, directories, abstracts, and bibliographies important to the national health effort, as appropriate to the programs of the National Library of Medicine, and (b) the support of the translation of biomedical literature. (2) Reviews requests for PHS publications support and provides secretariat service to the Advisory Committee on Scientific Publications.

"Research and Training Division

"Secures improved management of recorded information in the field of biomedical and related sciences through (1) the conduct and support of studies to improve capability for storing, retrieving and disseminating biomedical literature, (2) fostering programs to train specialists in the communication of recorded medical knowledge, and (3) supporting scholarship for the development of research monographs, critical reviews, bibliographies and historical studies related to the medical sciences, as appropriate to the programs of the National Library of Medicine."

FINANCIAL MANAGEMENT

The financial resources for the Library for Fiscal Year 1964 totaled \$4,659,640, including the direct appropriation for operations, \$4,074,000; foreign currencies for the Extramural Program in Poland, Yugoslavia, Israel, and India, \$576,000; and reimbursement from other government agencies for services, \$9,640.

The Appropriation Act for FY 1964 provided for 268 positions, an increase of 25 over the 1963 authorization. End-of-year employment was limited to 259, an increase of 19 over the number on duty at the close of FY 1963.

In December the Surgeon General's Budget Committee ruled that funds in the Library's construction account were not available for renovation on the mezzanine. The project was therefore funded from operating funds.

International Travel. A special budget for international travel and attendance at international meetings was submitted in November. Approval of this budget by the Department of Health, Education, and Welfare established limits on the amount of money to be obligated for foreign travel and on the number of employees attending international meetings.

1965 Budget. At the close of the fiscal year the 1965 Budget, having been approved by the House of Representatives, was awaiting action by the Senate Subcommittee on Appropriations for Labor, and Health, Education, and Welfare.

In addition to approving the amount requested in the President's budget, \$3,612,000, the House Appropriations Subcommittee added \$180,000 for a program of research in the History of Medicine, including improved access to resources and the preparation of studies and critical reviews.

The Subcommittee also made significant changes in the appropriation language to enable the Library to support research, training, and translation of scientific documents under authority of Section 301 of the Public Health Service Act.

Gift. The Library received \$150 from the Second International Congress on Medical Librarianship, designated for items for which appropriated funds may not be used.

User Charges. On the basis of a study of the cost of providing special photoduplication services during FY 1963, the cost of photostat negatives was decreased to \$.50 per page (\$1.00 minimum order) and the cost of photostat positives was decreased to \$1.00 per page, effective January 1, 1964. All other fees for photoduplication services remained the same.

PERSONNEL

Position Classification. Ninety-eight position descriptions were prepared and approved. Of these, 42 represented new jobs, and the remaining 56 represented previously established positions.

Promotions. There was a decrease in the number of promotions effected during the year: 65 compared to 76 in FY 1963.

Training. A total of 105 employees participated in various training programs designed to orient employees in the Library's operations or to increase their work skills. The general orientation program for new employees, scheduled three times during the year, was attended by 55 persons. Work-related training included subjects such as searching, indexing, and terminology, all allied to the MEDLARS program.

Thirty members of the staff attended training courses given by other government agencies. These courses, related to the trainees' regular assignments, covered such diverse topics as "position classification," "small purchases," and "legislative operations."

In addition, members of the staff took 76 courses in non-government facilities in foreign languages, library science, automatic data processing, introduction to immunology, and documentation. Most of this training was done on the employees' time.

Intern Program. The two 1962/1963 interns, Miss Marcia Ginguld and Mrs. Lucille Wiggin Wetherald, completed their program at the end of August and accepted permanent positions at the National Institutes of Health Library and the Welch Medical Library of Johns Hopkins University, respectively.

On September 3, 1963, the following librarians began internships at the Library:

Miss Nancy E. Noyes (Western Reserve University)
Miss Jennie Pumphrey (University of Chicago)
Miss Mary V. Wahl (Indiana University)

At the conclusion of the program in August 1964, the NLM Internship Program will be discontinued in favor of a Special Training Program under which outstanding graduates of American library schools and other qualified specialists will be recruited to fill appropriate NLM vacancies. A period of rotating assignments and in-service training will precede their assignment to regular library positions. Appointments to the program will follow the usual Civil Service procedures.

AWARDS

The Melvil Dewey Medal was presented to Dr. Frank B. Rogers at the American Library Association Conference in Chicago on July 19, 1963, in recognition of his "creative professional achievement."

Mr. Scott Adams received the Ida and George Eliot Award of \$100 at the 1964 Annual Meeting of the Medical Library Association for his article "Medical Library Resources and Their Development."

Two members of the staff of the Bibliographic Services Division received cash awards and citations in recognition of their sustained superior work performances: Mrs. Thelma G. Charen (\$250) and Mrs. Lillian Washington (\$150).

Incentive Program Awards were presented to five members of the staff:

Mrs. Thelma G. Charen, Bibliographic Services Division (\$75)
Mrs. Geneva Greene, Reference Services Division (\$30)
Mrs. Judith S. Jeweler, Technical Services Division (\$25)
Mrs. Jean B. Newman, Office of the Director (\$15)
Miss Lillian M. Scanlon, formerly Reference Services Division (\$15)

Awards for ten and twenty years services with the Federal government were given to fifteen Library employees on April 22.

VISITORS AND TOURS

Visitors came to the Library from fifty-three foreign countries, including Afghanistan, Argentina, Austria, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Czechoslovakia, Denmark, Dominican Republic, Egypt, England, Ethiopia, Finland, France, Germany, Greece, India, Indonesia, Iraq, Israel, Italy, Jamaica, Japan, Jordan, Korea, Lebanon, Mexico, New Zealand, Netherlands, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Puerto Rico, Singapore, Sweden, Switzerland, Syria, Taiwan, Thailand, Tunisia, Turkey, USSR, Venezuela, Wales, and Yugoslavia.

Programs were arranged for two foreign librarians who spent a week at the Library:

Mr. Khoo Oon-Chor, Librarian, Medical Faculty Library,
University of Singapore, August 12-16.

Miss E. M. Evans, Deputy Librarian, Royal Society of Medicine,
London, October 28 - November 1.

A work-study program covering the period of July 15 - August 9 was prepared for Miss Judith Licea-Ayala, Librarian, Instituto de Estudios Medicos y Biologicos, Ciudad Universitaria, Mexico City. Miss Licea-Ayala was the final fellow appointed under the Rockefeller Grant to the Medical Library Association.

Conducted tours were given to approximately 5,000 visitors who came to the Library singly and in groups. Early in 1964 the arrangements for Library tours were formalized under the Assistant to the Director and the desk of the Tour Coordinator was established in the first floor lobby.

FILMS

A 26-minute black and white motion picture, "The MEDLARS Story," was completed in June with the services of the Audiovisual facility of the Communicable Disease Center, Atlanta, Georgia.

A five-minute film on the Library prepared by the news department of NBC was shown on the Huntley-Brinkley Report in December 1963.

CHAPTER TWO

E X T R A M U R A L P R O G R A M S

This year saw a clarification of the Library's Extramural Programs as well as changes in its organizational framework. In March 1964, two new divisions were established - the Research and Training Division and the Scientific Publications and Translations Division. The activities of these two divisions will be directed toward assisting biomedical libraries in meeting the needs of their communities. The activities of these divisions are reflected in the new NLM Functional Statement on page 4, Chapter One.

Utilizing existing authorities, a four-point Extramural Program was being designed along these lines: (1) Training programs for the manpower necessary to exploit present capabilities to the fullest, as well as to meet present and future requirements for the technical advances in library-based communications methodology; (2) Research and development studies of regional and local library networks and the national logistics of an adequate library-based biomedical communications complex with adequate support for resources; (3) Special research programs directed at more clearly relaying research findings in an accessible and useful form to the user, whether he be investigator, teacher, student, or practitioner; and (4) Direct support for the strengthening of existing media for the secondary publication of biomedical information and the promotion of new or experimental forms. Of these four program areas, the fourth, support for secondary publications and translations, had been in existence since 1961. The other three were scheduled for future implementation when funds become available.

Personnel. Four new staff members entered on duty between March 1 and May 10, 1964: Dr. Marjorie P. Wilson, Associate Director for Extramural Programs, formerly Assistant to the Associate Director for Training in the Office of the Director, National Institutes of Health; Miss Mary E. Corning, Chief, Publications and Translations Division, previously Associate Program Director, Cooperative International Science Activities, National Science Foundation; Dr. Carl D. Douglass, Chief, Research and Training Division, formerly Nutrition Program Director for the Extramural Program of the National Institute of Arthritis and Metabolic Diseases, NIH; and Mrs. Maxine K. Hanke, Assistant to the Associate Director, formerly of the Reference Services Division, NLM. Miss Alice Billingsley and Mrs. Sally Miles continued as staff members in the Publications and Translations Division.

Publications and Translations Division. The publications support activities of the Library are funded both by dollars and by special foreign currencies, supporting (1) indexes, abstracts, bibliographies, critical reviews, and (2) the translation and publication of selected Soviet, Polish, Japanese, and Serbo-Croatian literature.

Dollar Publication Support Program. To respond to a need for an up-dated guide to research institutions in the U.S.S.R., the Division supported the compilation of a Directory of Medical and Biological Research Institutions in the U.S.S.R. under contract with Fordham University. Support was given for the compilation of bibliographies on Sarcoidosis, the Golden Hamster, Mathematical Biology, and Nucleic Acids. The Division also supported studies designed to provide meaningful data and background for future NLM activities. These included: The Research Library and Specialized Information Centers and a Journal Financing Outline.

The major portion of the FY 1964 dollar budget (\$445,000) was devoted to making foreign literature more available to United States scientists through the translation of articles and the provision of more abstract coverage. The Russian language literature received primary attention with the limited inclusion of Japanese literature. The principal activity was a selective translation program conducted by the Federation of American Societies for Experimental Biology (FASEB). Six issues of the Federation Proceedings - Translation Supplement were published in FY 1964.

In order to provide better abstract coverage, NLM contracted with Biological Abstracts, Inc., for the translation of 10,000 Soviet abstracts and with the Excerpta Medica Foundation for the translation of 9,500 Soviet and Japanese abstracts. Included in the February 1964 renewal of the Excerpta Medica contract was provision for 2,000 abstracts in the Gerontology and Geriatrics Section of Excerpta Medica.

Other translation activities included the support of a translated monograph, Heredity and Variability of Micro-Organisms, Moscow, 1962; the compilation of four supplements to the Bibliography of Medical Translations.

Special Foreign Currency Program. In addition to the dollar program, NLM has an overseas program funded by foreign currencies which have accrued to the credit of the United States Government from the sale of agricultural surplus products under the authority of the Agricultural Trade and Assistance Act of 1954 (P.L. 480), as amended. Special foreign currency funds are presently available to the Library in Israel, Poland, Yugoslavia, and India. No programs have as yet been initiated with India. The scientific and technical

content of these foreign currency programs is the responsibility of the National Library of Medicine, but the administrative aspects are handled by the National Science Foundation in accordance with an NLM-NSF agreement. The Library transferred a total of \$556,800 to NSF for this work, which included the publication and translation of two Russian serials, three Russian monographs and one Arabic manuscript in Israel; ten biomedical journals in Poland, and three biomedical journals in Yugoslavia.

Public Health Service Advisory Committee on Scientific Publications. The Publications and Translations Division provides the secretariat for the Public Health Service Advisory Committee on Scientific Publications. The Committee held three scheduled meetings at NLM during FY 1964, on October 10-11, 1963; February 20, 1964; May 22, 1964. The Committee's responsibilities encompass (1) the provision of a common PHS review mechanism for grant and contract applications to support scientific publications in the biomedical field; (2) advice and recommendations to the Surgeon General on important matters of policy with regard to PHS support of scientific publishing; and (3) the development of general guidelines for the review of future requests for funds.

Research and Training Division. A program was being developed to support research in all phases of biomedical librarianship, including investigations into the operations and functions of the library and its components, naturally-evolved communication systems involving the library, information storage and retrieval systems, new methods of information processing, experimental procedures for improving the dissemination of biomedical information, etc. Of particular interest will be studies on the interrelations of local and regional resource centers and their relationship to the National Library of Medicine.

In the late spring negotiations were carried out for the transfer of program responsibility from the National Institute of General Medical Sciences to the NLM for projects of a multidisciplinary nature in the history of the life sciences with special reference to the history of medicine, particularly as it relates to social, cultural, and scientific advancement. NLM participated in the review of ten research projects and two training grants in this area during the year.

The NLM training programs will have the dual purpose of strengthening the performance of existing medical libraries and developing qualified personnel for emerging systems. Plans were being made to support programs

to train specialists in the communication of recorded medical knowledge. Training grants and traineeships in the field of medical librarianship, biomedical science information specialties, information processing technology, history of life sciences, and biomedical science writing and editorial work will be eligible for support. Also of interest are programs designed to provide retraining for practicing librarians in some of the new technologies being introduced into biomedical service, as well as proposals for serious experimentation in methods of training in various phases of medical librarianship and related fields.

Another objective outlined in the program plans of this new Division is to further scholarship in the development of research monographs, critical reviews, bibliographies, and historical studies related to the biomedical sciences. To support this work NLM will sponsor regular and special Public Health Service research fellowships in these areas.

CHAPTER THREE

TECHNICAL SERVICES DIVISION

Two programs were especially important to the Technical Services Division during FY 1964.

The first, a considerable expansion of the Library's collecting policies, as projected during the previous year, was established in March 1964.

The second significant program in TSD was the systems analysis study launched in February 1964. During the previous month an interdivisional committee recommended that the General Electric Company's MEDLARS contract not be extended to implement the proposed secondary objectives relating to technical services. Instead, a systems analyst was assigned to the Division from the Data Processing Division to explore the feasibility of developing a general computer systems design for all operations in the Technical Services Division.

SCOPE AND COVERAGE

The principle of expanding the Library's collecting scope was approved by the Board of Regents at its December 1963 meeting. After several staff discussions the new activity was begun in March with initial emphasis on environmental health, fundamental chemistry, and the behavioral sciences.

Journal literature received priority, and a list of several hundred publications was compiled for consideration. Orders were placed during the last quarter of the fiscal year for 250 serials selected. It seemed likely that an increase in the acquisition of monographs would be proportionate to that of journals in FY 1965.

As examples of the 250 additional journals being received are the following: Progress in Automation; Progress in Cryogenics; Progress in Crystal Physics; Progress in Stereochemistry; Public Administration; Quarterly of Applied Mathematics; Radiochemistry; Review of the Institute of Applied Psychology; Reviews of Modern Physics; Russian Journal of Inorganic Chemistry; Science and Society; Social Forces; Sociological Quarterly; Solid State Abstracts; Sound; Studies in Public Communication.

SYSTEMS ANALYSIS

Objectives. In February 1964 a systems analyst was assigned to the Division from Data Processing to determine the feasibility of developing a general computer systems design for Technical Services

operations. This project is based on a "total systems concept" which is predicated upon the interrelationships of work functions in the four sections of TSD, rather than upon the components of any single operation in itself. The analysis follows the flow of materials through the Division's three areas of responsibility.

Area 1, the Procurement System, includes selection, searching, and acquisitions activities (except for the Serial Record). The need here is to develop an improved system for processing materials, both ordered and unsolicited, from the point of entry into the system, as bibliographic citations, or as actual items, to their forwarding to the cataloging activity.

Area 2, the Cataloging System, comprises the activities of both Cataloging and Catalog Maintenance Sections. The project is aimed in this area at the development of an improved system for receiving materials at the exit point of Area 1, and then developing essential bibliographic information for input into the computer. The information is to be produced as (a) a catalog record designed to serve NLM's retrieval needs, and (b) a recurring bibliographic publication incorporating the same data, but designed to serve other libraries as an acquisition and centralized cataloging tool.

Area 3, the Serial Record System, will be examined for anticipated conversion to partial or total automation, in order to expedite posting and claiming serial issues, and to provide more rapid, detailed information about the Library's serial holdings.

Method. After meeting with the assembled personnel of each section to introduce and describe the project, the analyst began the study phase. This has consisted of individual interviews with each staff member, observation of work routines, and collection of sample work materials and procedural data. He has next studied and organized the information acquired, presented it in both narrative and flow-chart form to the staff members for review, and in final form to the Division Chief. By the end of the year the analyst had interviewed all members of the Selection and Searching and Acquisition Sections, and about half the personnel of the Cataloging and Catalog Maintenance Sections.

SELECTION AND PROCUREMENT

New Bibliographical Sources. Four titles, noted below, were added to the group of publications from which selections are routinely made. This brought the total of such recurrent sources used to 221.

Biburos. Tokyo, Kokuritsu Kokkai Toshokan.
Boletim de bibliografia portuguesa. Lisboa. Biblioteca Nacional.
Hungarian medical bibliography. Bibliographia medica Hungarica. Budapest, Orszagos Orvostudemanyi Könyvtar es Dokumneatatis Központ.
Venezuela. Universidad Central, Caracas. Biblioteca Catalogo de obras ingresadas.

Soviet Union. In addition to the 77 journals regularly received in exchange for American periodicals from the State Central Medical Library, the Library of the Academy of Sciences of the USSR, and other Russian libraries, 383 publications were received on exchange from the Soviet Union (compared with 284 last year). Most were items difficult to acquire through other procurement channels, such as conference reports, transactions of various institutes, and journal issues needed to fill gaps.

Exchange partners added during the year were:

Leningrad. Institute of Experimental Medicine. Department of Virology.
Minsk. Lenin State Library of the Byelorussian SSR.
Moscow. Institute of Heart Surgery of the Academy of Medical Sciences.
Moscow. State Scientific Research Institute of Psychiatry.
Moscow. Institute of Epidemiology and Immunology. Department of Oncology.
Moscow. Central Scientific Research Institute of Prosthesis and Prosthetic Manufacture.
Tiflis. Scientific Research Institute for the Physiology and Pathology of Woman.

Personal contacts were established with several visiting Russian scientists, and through them NLM has set up potentially valuable working relationships with still other research institutes.

The State Department Publications Officer sent the Library 1,089 Russian publications during FY 1964. After the elimination of duplicates, 843 titles were added to the collection as compared with last year's 738. The total number of Russian publications added to the collection during 1964 was 1,464, including Library of Congress transfers and a few purchases but not counting periodical issues.

Eastern Europe. The chief source of Bulgarian materials continued to be the Durzhavna Biblioteka Kiril i Metodii in Sofia; 321 books were received from Bulgaria, nearly twice as many as last year's 175. The Glowna Biblioteka Lekarska in Warsaw, main source in Poland, supplied an average of 40 titles a month. Yugoslavia's

Centralna Medicinska Knjiznica, in Ljubljana, was an exchange partner added during the past year to provide blanket coverage for Slovenia. New exchange institutions in Zagreb were the Bolnica Dr. Stojanovic and the Imunoloski Zavod. In Czechoslovakia the principal sources of supply remain the National Medical Library and the Czechoslovak Academy of Sciences. Together they sent 187 items, or 85 per cent of the titles specifically requested on exchange.

Far East. About 250 new Japanese serials were added, including numerous back issues. Most of these resulted from the earlier exploitation of an abstracting service list described in last year's report. A majority of these accessions were gifts; their combined estimated value is \$750.

A total of 711 Japanese monographs were received during FY 1964, including 1962 and 1963 imprints received on blanket order, and items ordered earlier which the dealer had failed to supply.

From Mainland China current issues of 17 serials continued to arrive with fair regularity. There were 186 monographs supplied by commercial sources in Hong Kong, and by the American Consul General. Formosa provided 16 new serial titles, making a total of 63. The Library also received nearly all the monographs published there. Thirty-five new serial titles were received from South Korea (total, 40), but of 120 monographs ordered, only 35 arrived.

Exchange activities with the Philippines, Indonesia, and Thailand continued. From Miss Uthai Dhutiyabhodhi, Librarian, Siriraj Medical Library, Bangkok, Thailand, ten medical and scientific journals were requested. Procurement from other countries of Southeast Asia was negligible.

Under last year's agreement with Cornell University that NLM would receive medical items among materials sent to Cornell from India and Pakistan under the PL 480 program, 15 items were received.

Latin America. Dr. Robert B. Watson, Associate Director of the Rockefeller Foundation, agreed to help improve NLM contacts for location and procurement of Latin American materials. After a visit to the Library to discuss problems and possible solutions, Dr. Watson wrote to two librarians in Brazil and a medical officer in Peru. The Library received lists to facilitate checking for wanted items from these two countries, and a shipment of bibliographic materials arrived from Brazil.

In September 1963 the Library placed a blanket order with the firm of Stechert-Hafner for current Latin-American publications produced in countries other than Argentina, Brazil, Chile, Guatemala, and Mexico. Only 12 publications had arrived by the end of June.

Noteworthy Transfers. Four major reprint sets were acquired from the National Academy of Sciences in April. These comprise articles by Fellows in the Medical Sciences of the National Research Council, 1922-1940, and by Fellows in the Biological Sciences, 1923-1935; reports of investigations supported by the Committee for Research in Problems of Sex; and reports of investigations supported by the Committee on Research in Endocrinology, 1938-1948. This departure from the general policy not to acquire reprinted material brought together important segments of government-sponsored research done over several decades.

In June, a large collection of pamphlets and unbound books on social and health conditions throughout the world was transferred to the Library by the Public Health Branch of the Office of International Affairs, Department of Health, Education, and Welfare.

ACQUISITION

Expenditures. For the second year in succession the Acquisition Section's allotment of \$85,000 had been obligated by the end of March. An additional \$20,000 was provided in April for publications ordered under the program of scope expansion, and \$3,000 more in June, but it was necessary to withhold almost \$17,000 in orders until funds again became available in the new Fiscal Year. The continuing rise in general price level, the extremely high cost of a relatively few items, and the accelerated acquisition program of the History of Medicine Division all contributed to the early exhaustion of budgeted funds.

Central Magazine Company. As reported last year, journals which had not been supplied by this defaulting subscription agency had to be reordered during FY 1964 after extensive correspondence with publishers to determine the exact status of the Library's subscription orders. Completion of the final report to General Services Administration awaits only those bills not yet submitted by a few publishers.

Serial Issue Claims. Routine claiming and ordering of missing serial issues has been neglected for several years in favor of the more pressing activity of checking in issues as received. The introduction of simplified procedures this year made it possible to claim many missing numbers of currently received titles, but personnel shortages precluded the systematic reading of the entire Serial Record to locate titles for which subscriptions have lapsed. Index Medicus titles were checked, missing issues were claimed or ordered, and subscriptions which had lapsed were updated. These periodicals, for which prompt receipt is vital to production of the Library's major publication, will be regularly inspected.

Added Copies of Indexed Journals. It was found that copies of journals in great demand often reached the Reading Room after considerable delay because of the indexing backlog of the Bibliographic Services Division. To alleviate the problem, the serial checkers now send duplicates of indexed titles to the Reading Room instead of discarding them. Also second copies of 50 additional titles were purchased beginning with 1964 issues. When funds become available in the new Fiscal Year, second-copy subscriptions will be placed for 50 more.

CATALOGING

Current Operations. Cataloging of newly received materials is almost up to date, except for theses, which constitute most of the backlogged current receipts. Backlogs of Hungarian, Slavic, Scandinavian, and Chinese publications are being slowly reduced. There is a backlog of about 700 titles in obscure languages.

Recataloging. In January 1963 a specially organized Serials Recataloging Unit began work on unprocessed serials. Before 1944 serials were entered in the Document Section files, in the Serial Record, or in the Index-Catalogue and never recataloged or reclassified according to present-day standards.

Virtually all serials shelved on A level had been recataloged at the end of FY 1964. This included serials in Oriental or Cyrillic alphabets, and post-1945 issues of titles in the Roman alphabet. It was possible at the same time to recatalog related serials shelved on C level, where most of the titles which ceased publication before 1945 now await recataloging. Documents make up the other large serial collection still to be recataloged. Because of reduced staff and changes in emphasis, they have had little attention in recent years.

Monographs awaiting recataloging are chiefly theses, pamphlets, public health reports, box items, and elephant folios. Simplified cataloging procedures are being considered for the first two categories, while the others, most of which are listed in the Index-Catalogue, have been assigned a low priority.

Subject Headings. The catalogers use the same subject heading list as indexers - at present the third edition of MeSH. It has become apparent that MeSH would be a more effective cataloging tool if its contents were modified and applied to cataloging operations. An interdivisional committee was appointed in May 1964 to consider ways to make MeSH a more workable instrument as a subject heading authority list for library cataloging, and an experienced cataloger has begun a study of Cataloging Section subject heading needs for the committee.

NLM Classification. The third edition of the NLM Classification appeared in May 1964, reflecting many changes in medical terminology and recent developments in the biomedical sciences, particularly in psychopharmacology, space medicine, and radioactivity. Work began immediately on the fourth edition, for which two important innovations are being evaluated: (a) the publication, on a continuing basis, of changes in the Classification as they are made; and (b) inclusion in the fourth edition of Library of Congress classification numbers used by NLM for related and supplementary non-medical material. The insertion of LC numbers would be time-consuming and would increase both size and cost of the Classification, but would make available a single comprehensive source.

CATALOG MAINTENANCE

Reorganization. In January 1964 the Catalog Maintenance Unit of the Catalog Section merged with the Editorial Section to form the Catalog Maintenance Section, which comprises three units: Printed Catalog, Card Catalogs, and Publications Processings.

The Printed Catalog Unit produces all catalog cards for printing at the Library of Congress, and assembles and edits the subject section of the National Library of Medicine Catalog. The preliminary editing of card copy for consistency of cataloging and style was assigned to the Cataloging Section.

The Card Catalogs Unit completes the printed cards received from LC and distributes them to be filed in the NLM card catalogs. The unit is also responsible for making card corrections according to instructions from the catalogers, and for all other functions which ensure the currency, accuracy, and consistency of the catalogs.

The Publications Processing Unit is responsible for the processing of added volumes, transfers, and withdrawals.

General Operations. Sizeable backlogs accumulated after the reorganization, but were considerably reduced from April to June, during 448 hours of overtime. New work schedules now ensure completion of essential work in all areas.

History of Medicine Division cards for books cataloged by that Division were withdrawn from the Library shelflist late in April. A printed guide-card in each drawer of the Name Catalog will inform readers that cards for works published before 1801 may be found in the HMD catalog. The only cards now received from HMD to file in the Name Catalog are those for Americana published after 1800.

1963 NLM Catalog. The 1963 NLM Catalog was issued in May 1964. While its format is the same as that of the two preceding volumes, it is the first to reflect catalogers' use of subject headings from the second edition of MeSH, and the first in which items cataloged by the History of Medicine Division are not included. It contains 11,592 citations, with more Russian and Oriental material than its predecessors.

1964 NLM Catalog. One more annual issue will be published, during the incorporation of catalog entries in MEDLARS. The Subject Section in the forthcoming edition will be based on the subject headings of the third edition of MeSH.

Sexennial Catalog, 1960-65. In place of the previous quinquennial cumulations, a six-year cumulation is planned for publication in 1965. Work done on the subject part of this edition has been complicated by the fact that the annual volumes being cumulated reflect the use of three different sets of subject headings which must be reconciled, entry by entry. At the end of June, about 9,000 cards from the 1960-62 subject file had been pulled, changed, and refiled under new subject headings.

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

Fiscal Year 1964 was one of preparation for and transition into MEDLARS (Medical Literature Analysis and Retrieval System). Though work of the Bibliographic Services Division was entirely related to computer input when indexing for the January Index Medicus started in late September 1963, full-scale operation had not yet been attained at the end of the year. Index Medicus was to be produced for the first time from the Graphic Arts Composing Equipment (GRACE) in August in the form originally planned; demand searches were being performed on an experimental basis in anticipation of systems improvements; recurring bibliographies were being planned but none was yet officially in process; depth indexing was improving with experience and training; and a team of MeSH workers and advisers was being established. But the preparation had not been entirely internal. A great deal of time had been spent in laying the groundwork for cooperation with other groups to make MEDLARS a truly integrated tool of service to the entire medical community. Plans for cooperation involved extensive interchange with other major publishing groups such as Chemical Abstracts and the American Medical Association, as well as assistance to scientific agencies concerned mainly with obtaining recurring bibliographies.

Arrangements were made also with several groups for consultation and advice on the MEDLARS system in general. The major project was a study of indexing in the field of drug toxicity by Dr. William C. Spring, Jr., with the assistance of Mr. Boris Anzlowar. The report of this study is due early in Fiscal Year 1965.

A policy on availability and use of recurring bibliographies was drafted and approved by the Board of Regents at its meeting in December 1963. It provides that the Library will supply recurring bibliographies free of charge to qualified national, nonprofit organizations who will undertake wide distribution of the products. It further provides that these organizations will assist in the continuing development of MEDLARS.

A number of discussions were held with staff of the Technical Services Division and with the General Electric Company to resolve the problems of introducing monographs into the computer. It was finally decided to defer this step until a complete systems study of Technical Services Division's operations has been conducted. Computer filing rules, relating principally to monograph authors, were completed and reviewed.

Because of the delay in delivery of the Graphic Arts Composing Equipment (GRACE), the first six issues of Index Medicus were produced from the Honeywell high speed printer, but for the first time the arrangement and form of the citations were those planned for MEDLARS. -- the citations in the subject section were arranged under each heading by language with English first, and within language by journal. The vernacular form of the title was given in the author section.

During the publication of the 1963 Index Medicus backlogs had continued to build up because indexers could not index articles in greater depth at former rates, and typists had to prepare articles twice -- once for the Listomatic cards being used in production of the 1963 Index Medicus, and again for input into the computer. It soon became obvious that to prevent backlogs from becoming entirely unmanageable, it would be impossible to put all of the 1963 Index Medicus citations into MEDLARS, and it was decided to concentrate on English-language material. At the end of the fiscal year 45,072 citations from the 1963 Index Medicus and 96,944 from the 1964 Index Medicus were on MEDLARS tapes.

Organization and Personnel. By the end of the fiscal year National Library of Medicine personnel were operating MEDLARS in place of the staff of the General Electric Company. Two major organizational changes had taken place. The Data Processing Section was officially made a separate Division on March 18; its activities for the full year are reported separately. Mr. Seymour I. Taine, Chief of the Division since 1951 and Project Officer for the MEDLARS contract left the Library in June 1964 to accept a temporary consultancy to the World Health Organization pending his transfer to the National Science Foundation. Dr. Leonard Karel succeeded Mr. Taine, coming to the Library on May 24, 1964, from the National Science Foundation where he had been Acting Head of the Science Resources Planning Office.

Eleven professional staff members were acquired and five resigned.

One of the most serious problems for the future of the Division has been the difficulty of obtaining qualified MEDLARS personnel at the grade levels provided. Last year's annual report stated: "Indexing for the Index Medicus has changed in character over the past six months from an operation of moderate difficulty that required a good but not professional scientific background and a good foreign language background to one of extreme complexity and exactness, requiring top scientific knowledge, a high order of intelligence, extremely good judgment and a near-fluent foreign language ability." While certain exceptions have been made, no major change has yet occurred in the grade structure or in the levels at which indexers and searchers can be recruited. Two urgent tasks for Fiscal Year 1965 are revision of position descriptions and the grade structure and initiation of a full-scale training program, as discussed later in this report. A first step toward revision of the grade structure has been a study of the Library's organization by a management analyst of the Management Policy staff of the Office of the Surgeon General.

A committee has been organized in the Index Unit for the purpose of making recommendations on indexing problems. Committee members include the Head of the Index Unit, senior revisers, and a Subject Heading Specialist.

TERMINOLOGY

One full-time Subject Heading Specialist reported in April, and arrangements were made for employment of another in July. In addition, a Special Assistant, recruited for the Office of the Director on July 1, 1964, will have responsibility for review of, and recommendations on, subject headings. Three groups to consider subject headings were organized:

A MeSH (Medical Subject Headings) Advisory Group of government and nongovernment consultants held a two-day meeting in May. A general program introduced members of the group to MEDLARS and to past and proposed MeSH activities, such as new terminology, the need for a more precise hierarchical structure, the need for definitions, and the relationship of specialized information centers to MEDLARS.

With a view to the possible formation of a MeSH Catalog Users Group, the Library held an informal meeting during the Medical Library Association Convention in San Francisco in June to determine how those who use MeSH as an authority for cataloging could provide more effective feedback to the Library. It was suggested that the Library issue a periodic newsletter reporting on uses of MeSH and announcing changes.

A Committee for the Adaptation of MeSH for Library Card Catalogs, consisting of NLM division representatives, considered adaptations that would make MeSH a more effective tool for book cataloging. A preliminary report recommended study of additional cross references, and topical, geographical, and chronological subheadings, in addition to scope notes for broader headings. After further study of the problems, a final report will be submitted to the Deputy Director.

Coordination with other groups working on thesauri continued throughout the year. The Chief of the Division was designated last July as the Department of Health, Education, and Welfare representative on the Interagency Task Group for coordinating thesauri and classifications. This group was sponsored by the Federal Council for Science and Technology's Committee on Scientific and Technical Information. Discussions with members of the American Medical Association, Federation of American Societies for

INDEXING

Number of Articles Indexed. The total number of journal articles indexed for Fiscal Year 1964, 144,057, represented an increase of 2,800 over the previous fiscal year, but did not reach the projected increase of at least 150,000 articles due to preparation of material for the full implementation of MEDLARS.

Production was also slowed by the increased intellectual effort required in the changeover in indexing methods and use of new editions of Medical Subject Headings. Although familiarity with the subject heading changes and principles of depth indexing increased during the twenty months following these changes, the number of articles indexed per hour continues to be lower than in the past. Whereas an average of 10 articles an hour was considered a reasonable indexing rate formerly, in Fiscal Year 1964 the level was 6.2 articles per hour. In pre-MEDLARS days the average number of index terms per article was 1.8. In the past few months the average number of terms has been about 6.7 per article. Of these 6.7 subject headings, an average of 3 are Index Medicus headings (headings printed in the monthly issues of Index Medicus), and the remainder are non-Index Medicus headings (headings stored in the computer and available for its retrieval only).

The total number of articles indexed increased only because of increase in staff and extensive use of overtime. At the end of January 18,550 articles awaiting indexing. By June 30 the backlog had been reduced to 11,680. The increased competence of seven new staff members plus assistance provided by employees assigned to NLM by other agencies is expected to increase the currency of indexing. For the immediate future other factors will offset these benefits. Key staff members who usually contribute to production are devoting a large proportion of their time to training new Library indexers and staff of other agencies. New journal titles are being added to accommodate expanding programs of the Library and important new publications. In June a plan for yet deeper indexing of journals was introduced.

At present 2,299 different journal titles are indexed. Of these, 1,000 have been tentatively selected as representing the highest quality and significance in biomedical literature. Articles in these 1,000 titles will be indexed in extra depth, with probably as many as 20 headings in some cases. It is anticipated that the average article will be a source of 10 to 12 index entries, five of which would be Index Medicus subject headings. The remaining 1,299 journals will probably average about three Index Medicus headings per article, with a total of five or six headings overall.

Experimental Biology, Division of Research Grants, and National Institute of Child Health and Human Development were held. Particularly significant were meetings with the Division of Research Grants, in which it was agreed that a pilot study of immunology terms in the two lists would be carried out during the revision of MeSH for 1965, with the ultimate objective of working toward a single list for both groups.

In addition to a pilot study on immunology with DRG, other methods for obtaining new headings for the 1965 MeSH will include: review of provisional headings for final acceptance; comparison of MeSH with the authority list of the Index to Dental Literature by a representative of the American Dental Association staff; and analysis of the indexing of articles attracted to the large-volume headings such as NEOPLASM DIAGNOSIS, NEOPLASM RADIOTHERAPY, etc.

Revision of MeSH for the 3rd Edition was initiated in August. The net gain of subject headings was about 100, for a total of approximately 5,800 subject headings in the 1964 edition.

Dictionary File and Provisional Headings. Since 1952 the Bibliographic Services Division has maintained a 3 x 5 card file of chemical, drug, and medical terms, and technical and foreign expressions too new to be found in current dictionaries or reference works. The file was originally set up as an indexer authority file, to give the indexer specific instructions on how to index particular chemical or medical concepts. It was later changed to the dictionary-type entry of the present file which defines the term but does not relate it to subject headings. The Dictionary File is now in the process of being converted back into an authority file. In addition to the definition of the term, appropriate MeSH terms will be given.

During the fiscal year the number of provisional headings in the system doubled, to a total of over 500.

SEARCHING

A Search Unit was established in October. Its activities may be divided into two overlapping phases: organizational and experimental. By the beginning of February, when the second phase was initiated, 347 searches had been performed. The total number of questions answered from February through June 1964 was 239. The third phase, full-scale operation, awaits solution of some of the problems encountered in the first two phases.

Staffing - The major organizational problem has been staffing. Initially five searchers were trained - three from the Bibliographic Services Division and one each from the Technical Services Division and the Reference Services Division. The only trainees who had had several years' experience in indexing were two of those from the Bibliographic Services Division; the third resigned in September. Recruiting of new searchers continues, but it is apparent that previous experience is essential. Effective production in the Search Unit is delayed during a long training period. Two people who came to the Index Unit during the past year have been spending part time in the Search Unit while continuing their indexing training.

To supplement the staff other agencies were invited to supply experienced reference workers to learn search routines and to perform searches for their agencies and others. Two people reported to the Library in May to begin training in indexing policies.

In June the Bibliographic Services Division submitted a recommendation to the Director for coordination of MEDLARS searches with the activities of the Reference Section. This plan would provide manpower from Reference Section personnel who are familiar with Library routines. It would also enable manual searches to supplement the material in the computer, which is at present limited to 1964 and English-language material for 1963, and contains no monographs.

Tests - Initial tests of Demand Search and Report Generator modules were carried out jointly by the Library and the General Electric Company. These tests demonstrated problems in incompatibility between the two modules and other parts of the system, some program and input errors, and difficulty in identifying error conditions.

MEDLARS Demonstrations - Demonstration of the search capability began with performance of three sample demand searches in August for a group from the Association of Research Libraries. As requests for MEDLARS briefings increased during the year, a regular orientation program was instituted in March 1964. This program included description of the system with the aid of "flip charts" and distribution of booklets containing samples of standard requests, formulations, and bibliographies. The materials comprising the program were also used for internal training work of the Search Unit.

Experimental Searches - Problems of the small staff have limited the accomplishments of the Search Unit in the second phase of its

development, experimental searches for informed scientists. Requesters were selected on the basis of their ability to evaluate the results of the search performed. Since May a form for analysis of the search has accompanied each bibliography.

In general, those who have been supplied experimental bibliographies have expressed satisfaction with the citations received and have indicated that the bibliographies contained interesting papers of which they had previously been unaware. Those articles which they expected and did not find in the computer lists have been checked out individually to determine why they were not found. The reasons for this and for other constructive criticisms received were analyzed.

Some of the experimental searches were constructed to provide information on how regular recurring bibliographies on broad subjects could be performed for national organizations. The terms and logic to be included in these bibliographies will be held in the computer and checked against each citation as it is inserted. When a citation qualifies for such a bibliography, it will be given a recurring bibliography number and formatted for GRACE (Graphic Arts Composing Equipment) printout. At specified intervals, requests for these bibliographies will be made and camera-ready copy supplied to the agency or institution which has taken responsibility for publication of the bibliography.

At the end of the Fiscal Year plans were well under way for a recurring bibliography on arthritis and rheumatism for the American Rheumatism Association. Considerable work had been done on two bibliographies for the National Heart Institute. A number of other recurring bibliographies were in various stages of development, as summarized in the general table on cooperation with other organizations.

One might generalize that the computer searches have been most successful when greatest emphasis has been placed on clinical material, as in the arthritis and rheumatism bibliography, and least so when theoretical or research questions were asked, as one request for the relation of body weight of animals to the response to drugs, chemicals, or poisons, and another request for hereditary or environmental relationships in schizophrenia. It is, of course, always easier to locate information on observed facts than on ideas. In addition, Index Medicus has historically been more oriented toward clinical reports than basic research.

Indexing - An indexing manual was being completed at the end of the year. This manual should improve indexing consistency and make it possible for searchers to predict more reliably under what headings

certain material will be found. Designations for logical tree structures that would enable searchers to specify a number for a group of terms in MeSH, rather than listing them individually has high priority on the list of activities of the subject heading group. Such matters as better presentation of the terms and their relationships in MeSH and improvements in the way citations are being listed in Index Medicus will also be given further consideration.

TRAINING

One of the responsibilities shared by the General Electric Company and the National Library of Medicine during the development of MEDLARS has been that of training qualified individuals to carry out the new techniques involved in the computer system. In addition, the Library has recognized a responsibility for MEDLARS orientation of various kinds for medical reference librarians and others outside the Library who will use MEDLARS intensively. Finally, the capabilities of MEDLARS have added to the requirements of scientific and bibliographic education for present and future Library staff members. The time required to train increasing personnel has become so great that plans are being made for a full-scale training program.

A MEDLARS Terminology and Design Course, consisting of three half-day sessions and attended by about 40 Library staff members, was conducted by GE personnel in September. In July and August a series of MEDLARS Review Sessions on the system philosophy and operation were conducted by representatives of GE for key Library staff members.

Formal training of searchers by GE was completed in July 1963, and on-the-job searcher training seminars were held in August and September, with the Deputy Chief of the Bibliographic Services Division as discussion leader and one GE instructor, the technical reviewer. When the Acting Head of the Search Unit was designated in October, he became responsible for additional training programs. This responsibility has consisted of orientation for all new indexing staff members during the first two weeks of their indexing training program. In addition, a brief orientation series was held for all present Index Unit staff members.

Both the Search Unit and the Index Unit have spent a great deal of time on education during the past year, as eleven new staff members were acquired and the Library Interns spent time in the Division. Since search work requires a thorough grounding in indexing, the two new recruits to the Search Unit must continue their training in indexing on a part-time basis. Ideally, all searchers should index at least one day a week to keep up with new developments in the biomedical world and changes in NLM indexing practices.

The Index Unit and the Search Unit provided training for representatives of the American Dental Association, the National Institutes of Health Library, the National Institute of Neurological Diseases and Blindness, the Veterans Administration, and the American Physiological Society, all assigned to the Library.

A formal training program for indexers was initiated in January, but as yet no personnel have been recruited for a planned Training Unit. It is essential that such a unit be established as soon as possible, and efforts are being made to do so. In the meantime, materials are being readied for use of the new unit as well as of the present staff.

A preliminary draft of a Systems Manual, prepared by GE and reviewed and extensively revised by BSD staff members, was the basis for the final manual distributed at the end of the Fiscal Year.

A number of present staff members continued their linguistic, bibliographic or scientific education during the year by taking individual courses.

PUBLICATIONS AND PROJECTS

The Bibliographic Services Division continued to have editorial responsibility for Index Medicus and Cumulated Index Medicus although actual publication and reporting of statistics are to be handled by the Data Processing Division in the future. As in the past the List of Journals Indexed and the 1964 Revision of Medical Subject Headings were published in connection with the January issue of Index Medicus.

The Cerebrovascular Bibliography was continued as a pilot project for the third year. Issues for January-August and September-December 1963 were produced from the Listomatic cards which appeared under selected subject headings in Index Medicus.

The Bibliography of Medical Reviews (BMR), a separate annual publication of the Library issued as a by-product of Index Medicus, contains those articles which are reviews of the literature in the medical and biomedical fields. Articles for BMR are derived from the journals indexed for the Index Medicus and also from periodicals not indexed regularly for Index Medicus. All review articles are first cited in Index Medicus. Indexing for the 1963 issue of BMR (volume 9) was completed in September 1963 with 3,059 articles from Index Medicus journals and 207 from non-Index Medicus journals. At the close of Fiscal Year 1964, 2,841 articles from Index Medicus journals and 178 from non-Index Medicus journals had been indexed for volume 10, which will be completed in October 1964.

Portraits. For many years one of the auxiliary functions of the indexers has been to prepare cards for any portraits of medical or biomedical personnel that the indexers encounter in the journals they index. These cards are sent once a month to the History of Medicine Division, to be added to the citations in their Prints and Photographs Collection. 895 portrait cards were sent to the History of Medicine Division in Fiscal Year 1964, an increase over the 782 cards for Fiscal Year 1963.

CHAPTER FIVE

DATA PROCESSING DIVISION

ORGANIZATION

On March 18, 1964, Dr. David E. Price, Acting Surgeon General of the Public Health Service, approved the establishment of a new Data Processing Division to "... (1) perform systems analyses, (2) develop and maintain computer programs, (3) convert raw data for computer processing, and (4) provide computer services including production of bibliographical publications, demand searches, and recurring bibliographies."

Mr. Charles J. Austin was appointed Chief of the new Division, which is organized into three Sections and includes a small staff of systems analysts in the immediate Office of the Chief. The Sections are Programming, Operations, and Input.

MEDLARS CONTRACT

The MEDLARS contract with the General Electric Company continued during Fiscal Year 1964. Phase II, the detailed design phase, ended in November 1963, when the MEDLARS system became operational with the publication of the January 1964 issue of Index Medicus from data in the computer files. GRACE delivery constituted the most serious contractual problem. This equipment was originally scheduled for delivery to the Library on May 1, 1963, but did not actually arrive until May 11, 1964. Because of this delay the MEDLARS contract period had to be extended. A final contract supplement was negotiated with General Electric Company converting all remaining contract tasks to a fixed price and imposing a penalty clause should GRACE not meet a set of minimum performance specifications.

All contractor personnel assigned to the MEDLARS project, with the exception of those assigned to the output subsystem (GRACE), completed their work and left the project by February 1964.

PROGRAMMING

During the first four months of Fiscal Year 1964 the Programming Section assisted the General Electric Company in the final debugging of MEDLARS computer programs in order to minimize the problems of turnover when the contractor's staff completed its work. The period of November 1963 to February 1964 was devoted mainly to concentrated system testing, coordinating closely with the searchers and indexers of the Bibliographic Services Division. The Programming Section assumed complete program maintenance responsibilities in February 1964.

Two new programmers joined the staff during the year, making a total of five plus a supervisor. Members of the programming staff visited Photon, Inc., in Wilmington, Massachusetts, to evaluate GRACE scheduling problems, and also attended the National Honeywell Users' Association meetings in Boston and San Francisco. The Programming Section participated in planning the first MEDLARS decentralized search center to be established in Fiscal Year 1965. The Section will provide technical assistance to the new center in conversion of the MEDLARS computer programs from Honeywell language to that usable on the center's computer.

During the last three months of the fiscal year programmers were heavily involved in a crash effort to produce the Index Medicus on an IBM 1403 computer printer with upper and lower case characters. The July issue of the Index Medicus would be printed by this new method, which will also serve as backup to the GRACE equipment.

INPUT

Two systems continued in operation in the Input Section during the first half of Fiscal Year 1964. The parallel operation of the old Listomatic camera system with entry of data into the MEDLARS computer and permanent storage on magnetic tape placed a heavy production load on the Section. At the end of 1963, 45,000 citations had been stored in the computer files, considerably fewer than the original plan which called for 100,000 citations by the time MEDLARS became operational.

Training for full MEDLARS operation began in November 1963. Production increased steadily from the low level of 5,000 articles processed in November (during the training period) to the current average of about 14,000 new citations entered into the computer each month. It takes approximately three months for a new input typist to become productive, and personnel turnover constitutes the most serious problem in the Input Section.

MACHINE OPERATIONS

Fiscal Year 1964 saw the transition from program testing to production dominate the records of machine utilization. Virtually all computer time prior to September 1963 was charged to program testing or "debugging." In September some parts of the system began volume checkout using actual (or "live") test data, and by the end of December all programs required for daily operation of the system were fully tested.

The monthly issue of Index Medicus is scheduled to be run on the computer during the first week of each month, with the final inspection and shipment to the printer on the tenth calendar day.

The Operations Section staff not only operates the Honeywell 800 computer but also has responsibility for operation and maintenance of GRACE. Consequently the staff was heavily involved in system acceptance testing of the new equipment during June 1964.

This Section was also responsible for operation of the Listomatic Camera which was "retired" in March after filming of Volume 9 of the Bibliography of Medical Reviews.

SYSTEMS ANALYSIS AND DESIGN

A systems analyst joined the data processing staff in February 1964, to be responsible for the detailed analysis and design of new computer-based systems in all parts of the Library's operations. The object of this work involves major modifications or expansion of existing data processing systems (such as MEDLARS) as well as work on completely new applications.

The Systems Analyst first examined technical processing at NLM -- the selection, acquisition, and cataloging of new materials for the collection to determine in what areas the application of electronic data processing equipment might speed the processing and, more importantly, provide information on new arrivals as an acquisitions and cataloging tool for other medical libraries.

Some areas of technical processing which appear applicable to the computer include: searching, done to avoid ordering of duplicates; purchasing and accounting associated with ordering, receiving, and paying for new monographs and serials; and producing of multiple-set catalog cards for the new acquisitions. The activities of the Systems Analyst in TSD are described in greater detail in Chapter Three.

It is anticipated that the study and preliminary design phase of this project will be completed in the first half of Fiscal Year 1965, at which time a decision will be made on total or partial implementation, including an attempt to integrate the new system with MEDLARS.

EQUIPMENT

The following items of data processing equipment are currently either on order or installed in the Data Processing Division: Honeywell 800 large scale digital computer with seven high-speed magnetic tape units; Honeywell 200 small scale computer system with high-speed card reader, card punch, paper tape reader, line printer, and tape converter unit to translate from Honeywell to IBM magnetic tape; Photon 900 Computer Photo-Typesetter (GRACE); 17 paper tape typewriters (Friden Flexowriters); standard punched card equipment.

CHAPTER SIX

REFERENCE SERVICES DIVISION

Statistics on RSD's public service activities continued to show substantial growth, with the single exception of the interlibrary loan activity, which declined slightly. Most remarkable has been the increase in the reference and bibliographical activities both by readers on the premises and by correspondents reflecting, in part, the impact of MEDLARS publicity on the biomedical community. In most cases preliminary workload estimates were far exceeded by actual service loads. The future outlook suggests even greater pressures on Divisional programs. With the addition of GRACE, the effect of MEDLARS on the interlibrary loan and bibliographical functions as well as the readers service probably will increase. Additional pressures will come from accelerated intra- and extramural Library programs as well as the expanded role in health matters of both the Legislative and Executive branches of the Federal Government.

REFERENCE SECTION

Reference Questions (including bibliography). The Section answered 20,154 questions. This is an increase of 50 percent over the number of questions answered in Fiscal Year 1963 (13,418).

Bibliography. Literature specialization, first introduced into the Section in 1961, was severely tested during the year. Serious demands were made on the drug literature specialist (Mrs. Genevieve Schiffmann). Nearly every month witnessed crash bibliographic searches in this area for Congressional committees, and two of the bibliographies prepared for the Humphrey Committee, bunamiodyl (Orabilex) and tranlycypromine (Parnate), were published in subcommittee hearings and Drug Research Reports, respectively.

The specialist in the area of medical economics and medical jurisprudence (Dr. Jaroslav Nemeč) was called upon to produce several comprehensive bibliographies, including legal and ethical aspects of human experimentation, and at the year's end was bringing to completion a contract bibliography on the relationship between economic status and health.

Dorothy Bocker, M.D., completed Bibliography on Smoking and Health and began compiling a comprehensive bibliography on phenylketonuria for the Children's Bureau. In the area of the basic sciences, Mrs. Marjory Wright compiled Selected Basic Science Books in the Reference Collection of the National Library of Medicine.

Specialization in the neoplastic disease literature was added late in January when Miss Virginia MacDonald joined the staff. In the space of five months some 25 bibliographies of varying length were prepared in answer to requests in this area.

As an innovation, 18 routine bibliographies prepared in response to reference letters were listed in the NLM News as available upon demand. 725 copies of the bibliographies listed were requested.

Late in the year the Reference Section began the revision and updating of the non-historical entries of the Bibliography Section of the Handbook of Medical Library Practice. The Head of the Section was named co-editor of the project and individual members of the Reference Section were assigned responsibility for subject areas in accordance with their literature specialization.

Two members of the Reference Section staff were named in the Acknowledgments in Smoking and Health; Report of the Advisory Committee to the Surgeon General, Dorothy Bocker, M.D., and Charles Roos. Not listed but much involved in verification of the chapter bibliographies was Mrs. Betty Henry.

MEDLARS Liaison. An instructive and profitable relationship with MEDLARS was developed along informal lines during the last half of the year. For certain reference inquiries, machine searches were requested and the results of the latter were selectively combined with those of the manual search.

Readers Service Desk and Reading Room Services. The year witnessed a more efficient organization of the Readers Service Desk and Reading Room services. These services were placed under the immediate supervision of a single librarian who supervises the work of two sub-professional assistants. The Reference Librarian in charge of the Reading Room, the Section's specialist in the area of periodical literature, and the two library assistants undertook a large proportion of the identification questions in addition to operation of the Readers Service Desk.

Hours of Service. A new policy of Sunday service and longer evening hours during week days was inaugurated in September. Service hours now total 80 hours weekly except during July and August when the Library is open 51 hours per week. The popularity of the new hours is best evidenced by the Sunday and evening Readers Service statistics. During the 10 months of operation, Sunday counts showed that 2,415 readers received 4,275 volumes from the stack area. The number of readers varied from a low of 16 (September 15) to a high of 124 (March 15) with an average attendance of 62. Titles requested varied from 18 (June 14) to 224 (January 12) with the average 109. The value of the longer evening hours is more difficult to assess. Though stack service is suspended

at 9:00 p.m., a substantial number of patrons remain until 10:00 p.m. A two-week survey conducted in late January and early February showed an average of 18 patrons in the Library at 9:00 p.m. with an average of 7.5 patrons counted at 10:00 p.m. The 10:00 p.m. count varied from a low of one reader to a high of 17 readers.

Statistics. There was a 16 percent increase in Readers Request slips received in Fiscal Year 1964 (87,648) compared to Fiscal Year 1963 (75,301). This is only a partial indication of the use of the collections because use of Reference Collection material is not recorded. If the latter material were included in the count it may be conservatively estimated that not less than 125,000 items were used in connection with the Reading Room Services during the year.

A total of 26,133 readers was counted in the Reading Room. This is a 21 percent increase over the number counted in Fiscal Year 1963 (21,484).

LOAN AND STACK SECTION

Contrary to past trends and expectations, interlibrary loan requests decreased during Fiscal Year 1964, dropping from last year's 158,346 requests to 154,345. The past years' upward trend continued through the first three months of the Fiscal Year; since that time, with the exception of January, fewer requests have been received each month, and in May the number had dropped 2,344 below the previous year's count.

The reasons for the decline are not apparent at this time. Certainly the volume of research activity and the number of mission-oriented information services continue to climb. Some of the decline may be due to the continued, if slow, expansion of local library resources and related services. The compilation and publication of union holding lists in the Detroit, Cleveland, and other metropolitan areas has been complemented by loan service. Though precise statistics are not available, the effect of these actions on the NLM interlibrary loan operation seems to have been demonstrated.

Possibly the most significant factor in the decline was the decision to discontinue the free NLM ILL Request Form in favor of the ALA ILL Request Form for which there is a charge. The decision, announced in January for March implementation, resulted in a substantial reduction in the number of free forms distributed. It seems reasonable to assume that a slight upward trend noted in June will continue at a more accelerated rate during the coming year.

Collection Usage. The heavy concentration of loan activity among a relatively small and widely distributed group revealed by the Kurth Survey (April 1962) and by a 1963 study of 300 titles has tended to

create suspicion of abuse of the ILL service, but a detailed examination of request slips failed to support the abuse theory. The heaviest use of the top 300 titles comes from such non-medical users as a Federal regulatory agency, congressional committees, defense contractors (particularly for space research); public libraries in the smaller communities; hospitals and other medical facilities in the more isolated communities in this country as well as in the underdeveloped areas particularly in Latin America and Africa. Major recipients also include the U. S. military medical services and U. S. Public Health Survey teams which frequently operate in isolated parts of the world.

Interlibrary Loan Request Forms. In October 1963 the Reference Services Division proposed that distribution of the NLM Interlibrary Loan Request Form be discontinued and that borrowing libraries be asked to submit requests on the American Library Association Interlibrary Loan Request Form. This decision was made after a complete review of the two forms, including the degree of acceptance by other libraries and the adequacy of the forms to meet requirements of the NLM and other libraries in space, format, and number of copies. It was determined that this decision would be put into effect on March 1 and warning of the change was publicized in the NLM News and by mimeographed inserts in all Loan and Stack Section's correspondence. To help borrowing libraries, which were unfamiliar with the ALA form or which would be delayed in procuring copies, a supply of 25,000 forms was provided for initial free distribution. Most of these forms have now been distributed. A much reduced distribution is planned for libraries which have difficulty in purchasing the ALA forms because of foreign currency restrictions or lack of funds. To aid in the change, the Section also prepared and distributed in its correspondence a list of firms from which the forms could be purchased and sample filled-out requests for periodical articles and monographs.

Little objection to the change has been expressed, and use of ALA forms, already at about 50 percent before the announcement, has grown to some 90 percent. The standardization of size, the extra copies provided, and the extra space for information on the ALA form have been extremely helpful to the loan operation.

Loan Policy. To last year's innovation of a procedure for reserving materials at the bindery when the borrowing library desires to do so has been added a similar routine for reserve of materials already on loan in hard copy. Both procedures have been incorporated in a new mimeographed policy statement, which also spells out the Library's requirement that each item or item segment must be on a separate form, a requirement necessitated by pickup and filming routines.

Form Letters. An important improvement was made in April when the form letters, most of which are used to reply to requests which do not conform either to the Library's policy or to the requirements of the processing routines, were completely revised and standardized. Although

these letters do not change the Library's policy, they have great effect upon the Section's implementation of this policy. The goal in rewriting these letters was first to reduce the amount of original correspondence; more importantly, they will achieve an increased flexibility. Use of the new letters enables NLM to make exceptions under which urgent requests from physicians, researchers, and others can be accepted and at the same time such borrowers can be informed of the correct method of obtaining their requests through local libraries. Similarly, library requests which are not complete can be processed and the errors of the borrowing libraries corrected without the necessity of returning the requests.

Thesis Collection. In addition to the older theses which have either been cataloged or put in order by a university/date/author arrangement, the Library now has some 11,000 newer theses, unsorted except for a breakdown by Germanic, Romance, and Latin American languages; this group is increasing by approximately 2,000 pieces a year.

At present, service of this uncataloged collection is virtually impossible. Arrangement according to the existing classification will require between 20 and 25 man days. A film record of the title page suitable for cataloging recall will require five man days of camera work. Present plans call for a start in midsummer and completion no later than December 1964.

Cleaning of Collection. Dust from the volumes on B and C levels is filtering onto the shelves. This is especially regrettable in view of the planning which went into making the new stacks dust free. The previous effort to use vacuum cleaners on the books shows that this method of cleaning is not efficient; probably the best way would be to remove each piece from the shelf for dusting with a damp cloth, and dusting of the entire shelf before reshelving the books, as was done in the old building. Present staff ceilings preclude an immediate resolution of this problem; it is hoped that a cleaning project will get higher priority during an early budget review.

PRESERVATION SECTION

Recataloging Project. By the end of the fiscal year only half of the 2,800 recataloged W-1 serials had been labeled. One reason that the labeling has fallen somewhat behind the recataloging is that as sets are labeled they are also inspected for needed binding, filming, or acquisition of missing materials. Manpower shortages, however, may require concentration on the labeling aspect, since it is obvious that the combined operation is continuing to fall farther behind the recataloging work. During the labeling operation unbound material is divided into two broad categories -- that to be preserved by standard binding, and that to be converted into microfilm. Sets are completed where practicable,

particularly for the more important journals, either by ordering missing issues or by borrowing for filming. No effort is made to fill low priority titles. These are either bound or filmed incomplete, depending on their condition. A major re-shifting of the collection will be required as a result of the recataloging activity. The end result will simplify retrieval and other housekeeping operations of the reader and interlibrary loan service.

Binding. During the year 17,340 volumes were shipped to the commercial binder, an increase of 27 percent over last year. Funds to accomplish this increase came from a \$3,000 increase in binding funds and an unexpected decrease in binding charges; additional materials to be bound resulted in part from rebinds and older unbound materials collected from the recataloged serials and in part from the extra effort of the person normally assigned to collection.

Prices for commercial binding during the Fiscal Year were favorable: \$2.75 for new bindings and \$2.60 for rebinds. 2,400 of the new \$0.90 permabound volumes were bound during the year. A recent inspection of the first lot of these permabounds showed that all copies were in excellent condition. Prices for next year will increase slightly: \$2.90 for new binding; \$2.75 for rebinds; and no increase for permabounds. Funds available for the year will yield an approximate 18,500 volumes at this rate, but to accomplish this amount of work an additional preparer will be required.

Because of heavy wear of high-use journals, the decision was made that second copies of 276 such sets would be bound and maintained for filming and reader use for 20 years. An experimental lot of 40 volumes in economy bindings was tried and considered unsatisfactory. The present plan is to bind duplicate sets in full tan buckram with black lettering. Sets will not be shelf-listed. To bind the three years of journals now on hand will cost approximately \$1,700. Annual increments will cost about \$900 more; 282 feet of shelving, or 97 shelves, will be needed during each of the next 20 years to house these duplicate sets.

A new bookplate with a picture of the present library building and the Bethesda address was designed and has been used for all books received since February.

Paper Deterioration. Book materials in the collections now total an estimated 350 million pages. Of this amount 325 million pages represent material published since 1870. Best available information indicates the average life of this material to be 50 years. At present, 37 million pages are considered fully deteriorated, and by 1989 this figure will grow to 262 million. In June of 1961 a sampling of the collection indicated about six million pages were in an advanced stage of deterioration and in need of immediate preservation. All but 10 percent of micro-preservation work during the last three years has been devoted to this group, with the result that 2,160,000 pages have been converted, leaving almost four million as high priority for future programs.

Microrecords Unit. This small unit of three people is responsible for selection of material for micro-preservation, preparation for filming, inspection of the processed film, and maintenance and service of the film files. The Unit kept abreast of its routine chores, developed a new plan for organization of film files, and performed studies relating to future storage methodology.

Records in Microfilm. The most serious problem of the Library's microrecords program is that of deterioration through reader and copying use of our single copy silver emulsion film. Twenty-five percent of the collection shows damage of varying degree. In two cases during the year it was necessary to borrow and refilm volumes because our film had been so badly scratched that it was no longer legible; if this had been unique material, as much of our film is, these volumes would have been entirely lost.

NLM does not maintain a master negative, "a negative produced under optimum specifications and maintained under archival conditions," therefore, these films are not eligible for inclusion in Library of Congress's planned central register of master microfilms or in the proposed L.C. Serials on Microfilm. An opening assault on this problem has finally been made by the trial installation of a Kalvar Universal Microfilm Printer-Processor, capable of producing direct or reversible image Kalvar copies from film. Purchase of this or similar equipment will permit the maintenance of a silver negative film in archival condition and will also permit shelving the working copies with the original serials. In anticipation of this change, the Catalog Section has agreed to give classification numbers to all serial film cataloged in the future.

PHOTODUPLICATION SECTION

Microfilming operations showed a sharp increase in efficiency though not in total production, which increased by only 22,000 units over the previous Fiscal Year. Almost three and a quarter million page units were produced during the past year at a manpower cost of 80 percent of that for the previous year. This substantial reduction in cost was achieved through improved methods of work scheduling and work techniques. Conversion of poor paper increased by 29 percent over the previous year and History of Medicine Division security filming was up 181 percent. In Fiscal Year 1963 the average number of pages required to complete an order for an interlibrary loan was 18; during the past Fiscal Year this figure dropped to 16. Part of the reduction was due to the replacement of the photographically produced mailing wrapper by a pre-printed wrapper in February of this year. Use of the new wrapper saves about \$6,000 a year in production costs. Besides the actual dollar savings, the total capacity of the microfilm-xerographic hard copy system has been increased about 12 percent.

Film Deterioration. During the last quarter of the year 210 rolls of film, selected from the more than 9,000 rolls in the film file, were examined for signs of film blemishes. The inspection, part of a government-wide study, revealed four different types of defects. All samples, except a few processed during the last two years, contained varying amounts of defects; however, there is no apparent loss of information. The wash cycle in commercial processing plants is the suspected cause of film blemishes, since film processed at the Library of Congress and the National Archives is said to be free of blemishes.

Quality Control. The Photoduplication Section purchased a densitometer and a microscope to examine microfilm. Initial examination revealed problems of resolution and density caused by defects in both equipment and techniques. Reasonable results are now being achieved following rehabilitation of older cameras, including installation of curved platens, and introduction of new filming techniques and procedures.

Equipment. Items of non-instrument equipment acquired include a print washer and a Headliner. The latter device has proved particularly effective in rapid production of charts for library program presentations. Following a flash fire in the Feed Rail system supplying power to the Mobile Cameras, the brush type contacts were replaced by roller type contacts with marked increase in camera mobility.

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

The past year in the History of Medicine Division has been relatively stable compared to the previous two. No new major programs have been instituted. The staff has remained at, or nearly at, its authorized strength throughout the year, and the resignation of Mrs. Sheila Durling, who had for several years headed the Prints and Photographs collection, represented the only major change in personnel. This has been, rather, a year of consolidation and implementation of a decision made the year before, that the Division must complete an adequate catalog of its collection. Continued attention has meanwhile been given to acquisitions, within the Division's limited budget, and services to readers in person and by mail.

While unable to take on any major additional functions with its present staff, HMD during the past year has also been making plans for the future. Since this is a statement of actions taken rather than visions foreseen, it is appropriate to report that HMD participated in the preparation of a program for increased resources and research in the history of medicine, submitted to the Congress. This program recommended, for HMD, an increase in funds and personnel in order (1) to speed up the cataloging of the present collection, (2) to establish and maintain an active program for the acquisition and cataloging of manuscript materials, and (3) to compile critical bibliographies and special bibliographic information files necessary for the full utilization of the collection. As of June 30, 1964, action on this proposal was still pending.

CATALOGING

In last year's report changes in policies and procedures for the cataloging of early printed works were described. These have now been followed for a complete fiscal year with minor adjustments in detail. The benefits may be shown statistically by the fact that, with the same size staff, including fewer professional but more clerical personnel, the number of editions cataloged, compared to the average of several years past, has approximately quadrupled. The early American imprints remaining uncataloged at the beginning of the year were completed, so that this segment of the collection is now being handled on a current acquisition basis. The rest of the editions listed in the statistics are from the 16th and 17th century collections.

One of the situations that has long hampered efficient use of the collections in the History of Medicine Division has been the lack of a unified finding tool for all works in the Library published before

1801. To determine whether we have a book, it is necessary to look in two card files and three or four series of the Index-Catalogue. The progress now being made in cataloging the 16th and 17th century collections, which total about 15,000 pieces, promises to relieve this situation within a reasonable period. In the 18th century, with an existing backlog of approximately 42,000 pieces, other expedients have seemed necessary. Consequently, HMD has set as its initial goal the creation of a single card file containing at least one entry for each edition at the earliest practicable date. As the first step, the two existing card files, the name catalog and checklist, are being made compatible by careful establishment of the main entry for items in the old checklist, without regard, at this time, to other aspects of full cataloging. Insofar as possible we are using existing records as the basis of the work and searching names in batches rather than each in turn, for greater efficiency. On the basis of experience to date it is expected that it will take about one man-year of professional time to complete the 20,000 editions, more or less, in the checklist. We are also experimenting with title page photography and other possible work-saving devices and procedures for the 22,000 items, more or less, for which there is no card record in HMD.

ACQUISITIONS

For several years the acquisition program in the History of Medicine Division has relied almost entirely on the purchase of needed material as offered by dealers, chiefly in catalogs, with the addition of occasional gifts. For the first time in at least three years, this basic program has not been seriously hampered by lack of personnel. The statistics therefore show a gratifying increase. From a low of 147 in 1962 the number of editions added to the collections has risen to 452 in 1964. Of these, 79 were received in exchange for duplicates withdrawn from the collections.

One incunabulum was added to the Library's collection during the year, a German broadside, Jakob Honiger, Almanach in der hochgebreyten hohen schule zu Erffort ... auff das Mccccxciiij iar gecalculyret /Nuremberg, Kaspar Hochfeder, 1493?/, (Copinger 2273). Containing, with other information, directions for bloodletting and taking medicines, it represents a form of popular medical writing not heretofore represented among the Library's 15th century imprints. No other copies are recorded in the United States. Not too different in spirit was an American almanac for 1770, containing an "Essay on Physick," also added during the year as a later sample of popular medical literature.

Accessions of new American imprints were only 18 in number, reflecting the continuing difficulty of finding appropriate items not already in the collection. Six items listed in Austin's Early American Medical

Imprints were added; the remainder were out of scope for his work because of either date or form. Among the 16th century imprints were two rare Spanish editions of Galen, several ephemeral broadsides or brief pamphlets relating to preventive efforts against the plague, and five Paracelsian works. The majority of editions added, as usual, were 18th century imprints.

Additions to the manuscript collection included the registration book for annual meetings of the American Surgical Association, containing signatures of hundreds of the Nation's most distinguished surgeons, from 1882 through 1960. This came as a gift of the Association. Mrs. Elmer Woody, of Tryon, North Carolina, presented several medical student notebooks and other early 19th century manuscripts. A group of letters written by Charcot was received on exchange.

REFERENCE AND CIRCULATION

During the past year there were 342 visits from readers using the collection in HMD, and 1,111 editions were charged out for their use in the reading room. Extramural use totaled 484 editions, giving a total circulation of 1,595, which is approximately 2.7 percent of the size of the collection. Unnumbered hundreds of visitors also came in to learn something about the collection and in many cases to see and handle a "rare book." This demonstrates the continuing long term interest in the use of the Library's old material for purposes of research as well as for exhibition. Outside Metropolitan Washington the great majority of those who use the collection are connected with universities. About 90 percent are physicians or medical scientists; the remainder have represented disciplines ranging from English literature to metallurgy.

PRINTS AND PHOTOGRAPHS

During the year cataloging procedures for prints and photographs have been revised in order to permit the consolidation of certain subject files and the elimination of others. The collection of reference books was weeded, and some progress made in reducing the portrait cataloging backlog. The acquisition of two portraits of Sir Thomas Barlow, gifts of his daughter Miss Helen Barlow, points up the weakness of the collection in scientists born in the mid-nineteenth century. Gifts from relatives and friends would be particularly welcome in this area. Unfortunately, the size of the present staff does not allow time for a concentrated acquisitions effort, especially in face of a rising demand for services.

Major exhibits prepared during the year included those on 2,000 years of mental illness; medical orientalia; and a special selection of rare manuscripts and books from the historical collections, in

connection with the meeting of the American Association for the History of Medicine. Two special exhibits, one on classics of plastic surgery, the other on classics of hematology (prepared in cooperation with Dr. William Dameshek), were placed on display for visitors from international congresses held in Washington in these two fields. A special exhibit on medicine in the age of Shakespeare was prepared in honor of his anniversary.

ACQUISITION ACTIVITIES

	<u>1962</u>	<u>1963</u>	<u>1964</u>
SEARCHING			
Prospects considered for acquisition, not in Library	22,531	26,806	29,494
Prospects considered for acquisition, Library has	<u>13,991</u>	<u>11,912</u>	<u>15,468</u>
Total	36,522	38,718	44,962
<hr/>			
ORDERS PLACED	16,397	15,576	14,555
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SERIAL RECORD			
New titles added	739	956	1,511
Titles currently received (as of end of the year)	14,875*	13,888**	15,358**
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PUBLICATIONS ADDED			
Serial Pieces	63,959	67,832	71,323
Other	<u>11,338</u>	<u>16,151</u>	<u>19,782</u>
Total publications added	75,297	83,983	91,105
<hr/>			
OBLIGATIONS FOR PUBLICATIONS	\$85,000	\$87,000	\$108,000
(Included for rare books	\$ 8,981	\$11,873	\$ 14,007)
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*At least one issue received since January 1955

**At least one issue received since January 1959

GROWTH OF COLLECTIONS

	<u>CURRENT YEAR</u>			<u>COLLECTION TOTALS</u>	
	<u>Added</u>	<u>With- drawn</u>	<u>Net Gain</u>	<u>30 June 1963</u>	<u>30 June 1964</u>
<u>BOOK MATERIAL</u>					
1. Bound Monographs					
a. HMD	463	0	463	34,691	35,154
b. 1801-1913	16	208	-192	88,645	88,453
c. 1914-	<u>6,961</u>	<u>140</u>	<u>6,821</u>	<u>169,894</u>	<u>176,715</u>
Subtotal (1)	7,440	348	7,092	293,230	300,322
2. Bound Serials	<u>10,508</u>	<u>41</u>	<u>10,467</u>	<u>276,239</u>	<u>286,706</u>
Total Bound Volumes (1+2)	<u>17,948</u>	<u>389</u>	<u>17,559</u>	<u>569,469</u>	<u>587,028</u>
3. Theses	104	0	104	285,012	285,116
4. Pamphlets	<u>245</u>	<u>0</u>	<u>245</u>	<u>167,303</u>	<u>167,548</u>
Subtotal (3+4)	<u>349</u>	<u>0</u>	<u>349</u>	<u>452,315</u>	<u>452,664</u>
TOTAL BOOK MATERIAL	18,297	389	17,908	1,021,784	1,039,692
<u>NON-BOOK MATERIAL</u>					
1. Microfilms	430	2	428	2,883	3,311
2. Portraits and Pictures	<u>652</u>	<u>59</u>	<u>593</u>	<u>58,339</u>	<u>58,932</u>
TOTAL NON-BOOK MATERIAL	1,082	61	1,021	61,222	62,243
BOUND VOLUME EQUIVALENTS				<u>15,000</u>	<u>15,000</u>
GRAND TOTAL	19,379	450	18,929	1,098,006	1,116,935

CATALOGING STATISTICS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
<u>COMPLETED CATALOGING</u>			
New titles	11,719	11,090	11,326
Recataloged titles	<u>5,538</u>	<u>4,183</u>	<u>2,831</u>
Total	17,257	15,273	14,157
Volumes reclassified and/or transferred	3,474	3,797	873
Catalog cards filed	121,220	90,879	102,871
Volumes shelved	31,163	49,300	99,841
Volumes withdrawn	1,497	630	360

NATIONAL LIBRARY OF MEDICINE CATALOG
(Annual)

	<u>1961</u>	<u>1962</u>	<u>1963</u>
Main entries	20,260	15,592	11,592
Added entries	6,510	4,495	4,566
Name cross-references	5,003	3,706	2,856

REFERENCE SERVICES

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Requests by telephone	5,661	7,048	9,866
Government	(3,793)	(4,435)	(5,641)
Non-Government	(1,868)	(2,613)	(4,225)
Requests by mail	1,239	1,288	1,592
Government	(167)	(151)	(204)
Non-Government	(1,072)	(1,137)	(1,388)
Readers assisted	3,342	5,082	8,696
Government	(956)	(1,518)	(3,364)
Non-Government	(2,386)	(3,564)	(5,332)
Total	10,242	13,418	20,154
Government	(4,916)	(6,104)	(9,209)
Non-Government	(5,326)	(7,314)	(10,945)
Readers counted	11,544	21,484	26,133

BINDING STATISTICS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Volumes sent to binder	10,870	13,630	17,340
Volumes returned from binder and processed	13,838	11,440	16,933
New volumes	(9,927)	(9,468)	(12,933)
Rebinds	(3,911)	(1,972)	(4,000)
Volumes bound at NLM	3,721	2,374	2,807
Volumes repaired at NLM	1,105	785	2,513
Volumes and pieces lettered	26,119	33,519	66,546
Pictures mounted	31	54	199

CIRCULATION STATISTICS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Requests received	178,860	233,647	243,464
Requests filled	161,090	205,709	213,711
Requests unfilled	17,770	27,938	29,753
Rejected	(3,039)	(4,692)	(5,973)
Unavailable	(14,731)	(23,246)	(23,780)
Percentage of Requests filled	90.0	88.0	87.7

ITEMS USED, BY MAJOR CATEGORY

Readers' requests in Library	47,605	70,791	83,156
Interlibrary loans	113,485	134,918	130,555
Photocopy	(106,967)	(128,399)	(124,569)
Original-			
Government	(3,334)	(3,282)	(3,164)
Non-Government	(3,184)	(3,237)	(2,822)

UNAVAILABLES

	By percentage of total unavailables			By percentage of total requests accepted	
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1963</u>	<u>1964</u>
Already on loan	4.3	8.9	9.6	0.9	0.9
Not in collection	42.0	30.4	32.2	3.1	3.2
At bindery	5.7	26.4	21.0	2.6	2.2
Missing	15.7	15.0	13.4	1.5	1.3
Does not circulate	7.3	7.4	9.4	0.7	0.9
Not identified	16.0	5.0	3.5	0.5	0.4
In process	8.0	6.9	10.9	0.7	1.1
At HMD	<u>1.0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	100.0	100.0	100.0	10.0	10.0

PHOTOGRAPHIC SERVICES

TABLE I - EXTERNAL ORDERS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
<u>EXTERNAL ORDERS COMPLETED</u>	108,454	130,290	126,327
By type of order:			
Interlibrary loan	(106,967)	(128,399)	(124,569)
Coupon, paid, special	(1,487)	(1,891)	(1,758)
By type of service:			
Microfilm	(247)	(161)	(23)
CopyFlo	(96,907)	(126,812)	(124,121)
Photostat	(188)	(685)	(567)
Xerox 914 Copier	(10,476)	(2,017)	(1,184)
Photoprints	(205)	(230)	(289)
Photographs and slides	(431)	(385)	(143)

PAGES DUPLICATED FOR ORDERS

Microfilm:	2,243,862	2,296,620	1,940,104
For CopyFlo orders	(2,229,372)	(2,284,401)	(1,934,490)
For microfilm orders	(14,490)	(12,219)	(5,614)
CopyFlo (from film file)	5,223	5,583	9,451
Photostat	1,081	3,564	3,282
Xerox 914 Copier	103,160	17,996	11,257
Photoprints	2,454	2,220	2,415
Photographs and slides	658	659	604
Total	<u>2,356,438</u>	<u>2,326,642</u>	<u>1,967,113</u>

CARDS

Microfilm	0	0	2,805
CopyFlo	<u>6,583</u>	<u>27</u>	<u>2,805</u>
Total	6,583	27	5,610

PHOTOGRAPHIC SERVICES

TABLE II - INTERNAL ORDERS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Microfilm pages	596,538	919,029	1,297,876
For film file	(6,644)	(80,764)*	(228,321)
For poor paper program	(570,662)	(821,989)	(1,062,433)
For interoffice orders	(19,232)	(16,276)	(7,122)
Paper reproduction pages	70,710	141,332	107,376
Photostat	(1,120)	(844)	(476)
CopyFlo	(31,549)	(43,702)	(20,782)
Photoprints	(486)	(12)	(58)
Xerox 914 Copier	(37,555)	(96,774)	(86,060)
Photographs and slides	2,054	1,887	1,551
Cards - Microfilm	199,701	185,319	144,825
- CopyFlo	227,232	276,704	146,080

TABLE III - TOTAL PRODUCTION

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Microfilm pages	2,840,400	3,215,649	3,237,980
CopyFlo pages	2,266,144	2,333,686	1,964,723
Photostat pages	2,201	4,408	3,758
Xerox 914 Copier	140,715	114,770	97,317
Photoprints	2,940	2,232	2,473
Photographs and slides	2,712	2,546	2,155
Cards - Microfilm	199,701	185,319	147,630
- CopyFlo	233,815	276,731	148,885

TABLE IV - ORDERS COMPLETED AS INTERLIBRARY LOANS

	<u>1964</u>		
	<u>Government</u>	<u>Non-Government</u>	<u>Total</u>
Metropolitan Washington	19,282	7,217	26,499
Outside Washington (U.S.A.)	20,393	55,443	75,836
Overseas	<u>4,863</u>	<u>17,371</u>	<u>22,234</u>
Total	44,538	80,031	124,569

*History of Medicine Division

HISTORY OF MEDICINE

	<u>1962</u>	<u>1963</u>	<u>1964</u>
<u>ACQUISITION</u>			
Editions searched	1,974	3,482	4,565
Editions recommended for purchase	303	455	553
Editions added to collection	147	300	452
In book form	(145)	(297)	(452)
In microfilm	(2)	(3)	(0)
<hr/>			
<u>CATALOGING</u>			
Editions cataloged	186	1,217	2,305
Card mats produced	1,232	368	3,111
Catalog cards filed	4,497	5,231	15,683
<hr/>			
<u>BINDING</u>			
At commercial bindery	81	0	0
At hand bindery	<u>52</u>	<u>0</u>	<u>0</u>
Total books bound	133	0	0
<hr/>			
<u>REFERENCE</u>			
Readers	160	176	342
Interlibrary loan and Photoduplication orders	433	426	484
Original material loaned	(237)	(179)	(217)
Photocopies	(196)	(247)	(267)
<hr/>			
<u>PAGES FILMED</u>			
For loan and special orders	11,765	4,376	4,041
For security	598	77,091	198,729
For acquisition	<u>715</u>	<u>0</u>	<u>0</u>
	13,078	81,467	202,770
<hr/>			
<u>PRINTS AND PHOTOGRAPHS</u>			
Items added to collection	473	876	593
Pictures cataloged/indexed	592	438	473
Reference use of material (total of pictures supplied)	805	713	980
Reference questions answered	220	226	281

INDEX MEDICUS

	<u>1962</u>	<u>1963</u>	<u>1964</u>
<u>DISTRIBUTION</u>			
Paid subscriptions, United States and foreign	4,225	4,238	3,755
Gift and Exchange			
United States	757	764	769
Foreign	<u>947</u>	<u>926</u>	<u>882</u>
Total	1,704	1,690	1,651
GPO single copy sales and stock	1,186	1,154	1,697
Depository libraries	289	308	377
NLM internal use and stock	<u>96</u>	<u>110</u>	<u>120</u>
Total distribution	7,500	7,500	7,600
<hr/>			
JOURNAL TITLES INDEXED	2,132	2,244	2,299
CITATIONS PUBLISHED	141,911	139,462	133,413

INDEX MEDICUS

SCHEDULE OF COMPLETED ISSUES

1963

1964

Issue	Number of Items	Date Shipped to Printer	Number of Items	Date Shipped to Printer
<u>Vol. 3, Nos. 7-12</u>			<u>Vol. 4, Nos. 7-12</u>	
July	13,625	June 7	14,032	June 11
August	10,934	July 12	10,000	July 15
September	14,188	Aug. 10	11,364	Aug. 12
October	12,811	Sept. 11	9,241	Sept. 12
November	9,875	Oct. 10	9,903	Oct. 10
December	15,840	Nov. 14	13,070	Nov. 10
<u>Vol. 4, Nos. 1-6</u>			<u>Vol. 5, Nos. 1-6</u>	
January	7,035	Dec. 20	5,121	Dec. 12
February	6,529	Jan. 14	7,762	Jan. 15
March	10,537	Feb. 8	11,074	Feb. 12
April	12,042	Mar. 13	13,040	Mar. 12
May	14,046	Apr. 16	13,878	Apr. 10
June	<u>12,000</u>	May 13	<u>14,928</u>	May 12
Total	139,462		133,413	

COMPUTER UTILIZATION

	<u>March-June</u> <u>1963</u>	<u>1964</u>
Production	38:21	873:17
Program Checkout	686:01	1,499:37
System Testing	84:16	190:54
Rerun System	6:49	0
Training and Demonstration	0	24:01
Use by other agencies	0	9:20
Lost time	<u>0</u>	<u>15:30</u>
Total use (in hours and minutes)	815:27	2,612:39
<hr/>		
Downtime	36:41	32:55
Uptime	96%	98.8%

PERSONNEL STATISTICS

TABLE I - PERSONNEL ON DUTY

	<u>1963</u>	<u>1964</u>
Personnel authorized	243	268
Personnel on duty (at end of year)	240	259
Average number of persons employed	227	247
<hr/>		
<u>PERSONNEL ON DUTY</u>		
Office of the Director	32	41
Extramural Program	8	
Research and Training Division		3
Publications and Translations Division		6
Intramural Program		
Bibliographic Services Division	60	29
Data Processing Division		37
History of Medicine Division	12	13
Reference Services Division	68	70
Technical Services Division	<u>60</u>	<u>60</u>
	240	259

TABLE II - PERSONNEL ACTIONS

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

FINANCIAL STATISTICS

<u>Obligations for</u> <u>Library Services and Resources</u>	<u>FY 1962</u>	<u>FY 1963</u>	<u>FY 1964</u>
11 Personnel Compensation	\$1,260,116	\$1,392,517	\$1,630,995
12 Personnel Benefits	96,418	106,311	115,102
21 Travel	22,599	20,116	33,068
22 Transportation of Things	3,993	4,300	2,547
23 Rent, Communications, and Utilities	53,689	120,733	178,675
24 Printing, Binding, and Reproduction	86,528	103,257	134,038
25 Other Services	208,002	1,265,043	991,865
26 Supplies and Materials	40,695	66,688	81,149
31 Equipment (Books)	89,749 (85,046)	241,688 (89,449)	880,081 (104,778)
41 Grants	0	5,579	0
Appropriation Transfer to LC	<u>8,000</u>	<u>8,000</u>	<u>8,000</u>
ESTIMATED TOTAL OPERATING COST	<u>\$1,869,789</u>	<u>\$3,334,232</u>	<u>\$4,055,520</u>

Other Obligations

Science Translation Program	\$ 389,604*	0**	0**
Scientific Activities Overseas:			
Transfer to NSF	732,820	\$ 537,760	\$ 556,800
Direct obligations	0	4,300	10,380
Construction of Library Bldg.	459,409	349,474	3,976
MEDLARS	1,039,029	0**	0**
Collections for Photoduplication Services	2,079	2,304	1,807

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

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

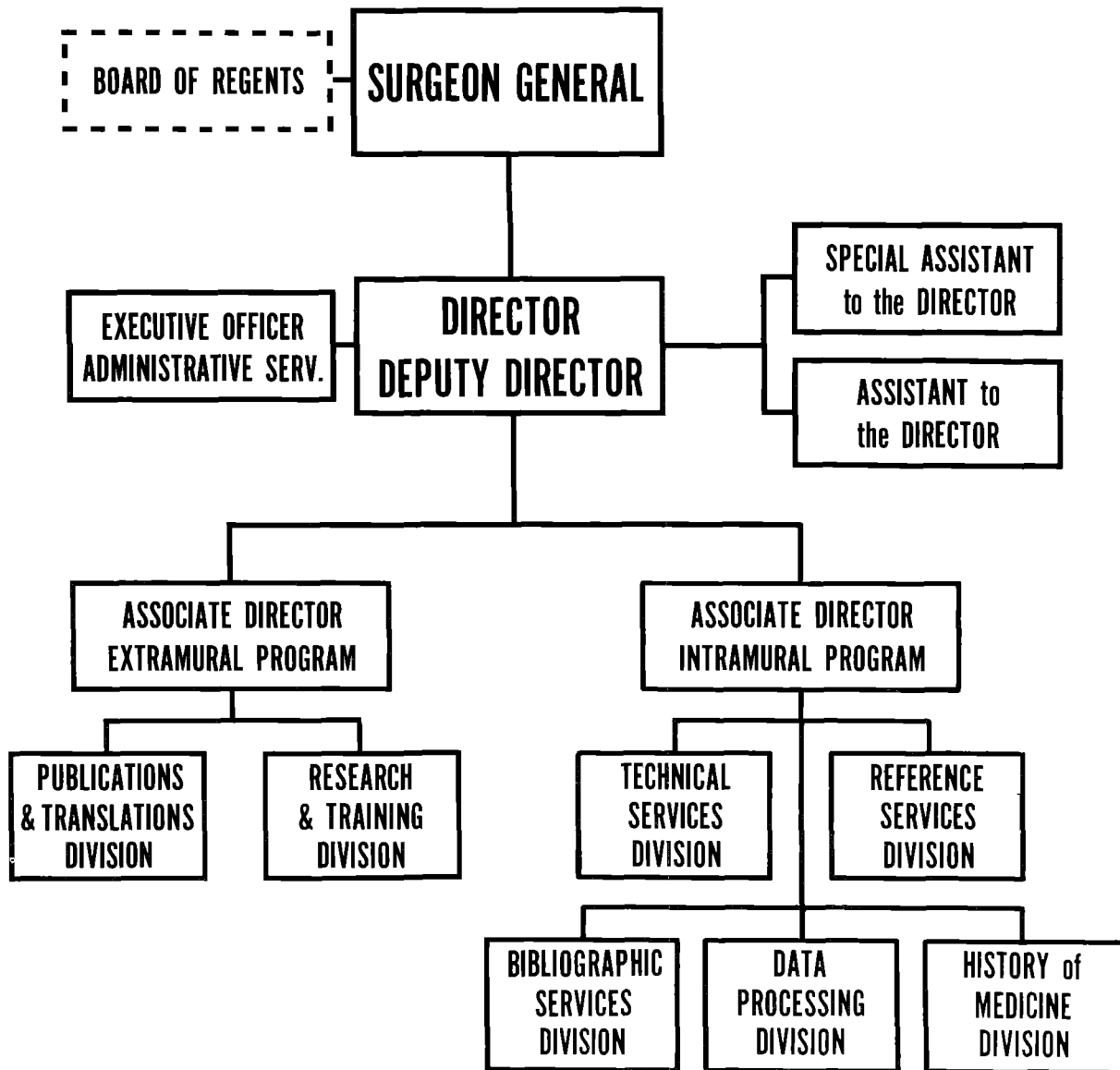
PUBLICATIONS

- Bibliography of Medical Reviews. Volume 9, Washington, 1964. 165 p.
(Government Printing Office: \$1)
- Bibliography of Medical Translations, January 1959-June 1962. General
Subject Index. Bethesda, Maryland, 1964. Public Health
Publication No. 1212 (Bibliography Series No. 50)
- Bibliography of Medical Translations, July 1962-December 1962. Quarterly
Supplements 1 & 2. Bethesda, Maryland, 1964.
- Bibliography of Medical Translations, January 1963-June 1963. Quarterly
Supplements 3 & 4. Bethesda, Maryland, 1964.
- Index Medicus. (Monthly) (Government Printing Office; annual
subscription: \$26)
- National Library of Medicine. Public Health Publication No. 507,
revised May 1964. 22 p.
- National Library of Medicine Annual Report, Fiscal Year 1963. 72 p.
(Multilithed)
- National Library of Medicine Catalog, 1963. Washington, Library of
Congress, 1964. \$20.50.
- National Library of Medicine Classification. 3d ed. Bethesda, Maryland,
1964. 286 p. (Government Printing Office: \$2)
- National Library of Medicine News. (Monthly)
- Adams, Scott. MEDLARS and the Library Community. Bull Med Libr Ass 52:
171-7, January 1964
- Adams, Scott. Hospital Libraries: Underdeveloped Base for Continuing
Education. Hospitals 38: 52-4, June 16, 1964
- Adams, Scott, and Taine, Seymour I. Searching the Medical Literature.
JAMA 188:251-4, April 20, 1964
- Adams, Scott, and Taine, Seymour. The National Library of Medicine and
MEDLARS. Rev Int Doc 31: No. 3, 107-10, 1964
- Austin, Charles J. Data Processing Aspects of MEDLARS. Bull Med Libr
Ass 52: 159-63, January 1964

- Blake, John B. Books, Libraries, and Medical History. JAMA 188-263, 1964
- Blake, John B. Medical Records and History. Amer Archivist 27: 229-35, 1964
- Blake, John B. /Review of/ Francisco Guerra, American Medical Bibliography, 1639-1783. Bull Hist Med 37: 481-7, 1963
- /Bocker, Dorothy/. Bibliography on Smoking and Health, 1958-1963. Washington, 1963. 59 p. Public Health Publication No. 1124 (Bibliography Series No. 45) (Government Printing Office: 25 cents)
- Clarke, Robert F. Recruiting New Graduates of Library Schools. Wilson Libr Bull 38: 493-4, February 1964
- Davis, Anne C., and Booth, Frank E. Programming and Coding Techniques Used in MEDLARS. In: Automation and Scientific Communication, August 1963
- /Durling, Richard J./ Selected Reference Works for Rare Book Librarians Exhibited in the National Library of Medicine. 1963. 11 p. (Multilithed)
- Hardy, May G., and Durling, Richard J. Baumgartner-Fulton 5: A Corrigendum. J Hist Med 18: 385-6, 1963
- Rogers, Frank B. The Development of MEDLARS. Bull Med Libr Ass 52: 150-1, January 1964
- Schiffmann, Genevieve N. Adverse Reaction to Tranlycypromine; Clinical Reports; Annotated Bibliography. In: U. S. Senate. Committee on Government Operations. Interagency Coordination in Drug Research and Regulations; Hearings Before the Subcommittee on Reorganization and International Organizations. Washington, 1964. Pt. 5, p. 2634-43. Reprinted in: Drug Research Reports 7:S-19-26, June 24, 1964
- Schiffmann, Genevieve N. Adverse Reactions to Chloroquine, Particularly Retinopathy, 1957-February 1964. Annotated Bibliography. Ibid. Pt. 5, p. 2612-25
- Schiffmann, Genevieve N. Adverse Reaction to Efocaine; Clinical Reports; Bibliography. Ibid. Pt. 5, p. 2691-4
- Schiffmann, Genevieve N. Bunamiodyl (Orabilex); Bibliography. Ibid. Pt. 4, p. 2076-7

- Schiffmann, Genevieve N. Bunamiodyl (Orabilex); Supplement; Addendum to Bibliography. Ibid. Pt. 5, p. 2697
- Sewell, Winifred. MEDLARS in Medicine. J Amer Pharm Ass NS4: 292-4, June 1964
- Sewell, Winifred. Medical Subject Headings in MEDLARS. Bull Med Libr Ass 52: 164-70, January 1964
- /Sewell, Winifred/. Drug Literature. A Factual Survey on "The Nature and Magnitude of Drug Literature" by the National Library of Medicine. Report prepared for the Study of "Interagency Coordination in Drug Research and Regulation" by the Subcommittee on Reorganization and International Organizations, Senate Committee on Government Operations. Committee Print. Washington, 1963. 171 p. (Government Printing Office: 65 cents)
- Taine, Seymour I. Bibliographic Aspects of MEDLARS. Bull Med Libr Ass 52: 152-8, January 1964
- Taine, Seymour I. The National Library of Medicine Medical Literature Analysis and Retrieval System (MEDLARS). In: Automation and Scientific Communication, Short Papers... 26th Annual Meeting of the American Documentation Institute, Chicago, October 6-11, 1963: 105
- Wright, Marjory H. Selected Basic Science Books in the Reference Collection of the National Library of Medicine. Bethesda, Maryland, 1964. 30 p. (Multilithed)
- Wright, Marjory H. Some Recent Paperback Books on Health and Medical Subjects. Bethesda, Maryland, 1963. 6 p. (Multilithed)

NATIONAL LIBRARY OF MEDICINE



June 30, 1964