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Life Sciences

(Classes QH, QK, QL, QM, QP, and QR and selected portions of class Z)

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I. Scope

The Collections Policy Statement for the Life Sciences covers the subclasses QH (Natural history, Ecology, and Biology), QK (Botany), QL (Zoology), QM (Human anatomy), QP (Physiology), and QR (Microbiology) and applicable subclasses of Class Z. Although the Library holds large numbers of 19th- and early 20th-century medical works, since the early 1950s it has deferred to the National Library of Medicine (NLM) for the acquisition of clinical medicine. See the Collections Policy Statement for Medicine. For the same period, the Library has also deferred acquisition of technical agriculture to the National Agricultural Library (NAL). Both NLM and NAL receive surplus materials and those that are out of scope for the Library's collections. Collections Policy Statements for Agriculture and the Joint Statements with NLM and NAL for Veterinary Science and Biotechnology as well as the Statements for Electronic Resources, Dissertations and Theses, and Web Capture & Archiving provide a more complete picture of the Library's collecting policies in the life sciences. Both NLM and NAL receive surplus materials and those that are out of scope for the Library's collections.

II. Research Strengths

A. General

The Library's collections in the life sciences display the same breadth and depth of coverage characterized by the Library's scientific collections in general. The collections number well over half a million titles and are among the largest in the country. Materials in botany, biology, ecology, general genetics, and zoology, the backbone of the life sciences collections, number over 176,000 titles. This aggregation is supplemented by even larger collections in general medicine, pharmacogenetics, biotechnology, gardening, horticulture, conservation, general agriculture, and materials on anatomy, physiology, and bacteriology.

Publications in the life sciences issued by learned societies, research institutes and major universities, both foreign and domestic, are well represented. This is especially true of publications issued in the 18th and 19th centuries, acquired through the Smithsonian Deposit (1866) and its exchange programs, from which the Library has long, unbroken runs of proceedings, memoirs, monographic series, and journals. Beginning with the last quarter of the 20th century, a variety of electronic resources have provided improved bibliographical access to many of the Library's materials in the life sciences. In the

1990s, electronic journals, conference papers, born digital materials, web sites, and other electronic resources in the life sciences were added to the Library's collections, using these same collection policies. The Selection Guidelines for Electronic Resources provide additional direction and guidance.

The Library's collections in biology are as substantial as they are diverse. They include a wide variety of monographs and journals on molecular, systematic, and evolutionary biology, population genetics, natural history, ecology, animal behavior, and microbiology. Its botany collections, including the taxonomy, morphology, physiology, and evolution of plants, are also significant in depth and breadth and especially rich in works emanating from herbaria, botanical societies and botanical gardens. Collections in zoology, which include the taxonomy, anatomy, physiology, behavior, and evolution of millions of creatures, likewise offer sizable and wide-ranging resources for researchers as do the collections on invertebrate and vertebrate zoology. These materials are noteworthy in number, language, scope, and level of comprehensiveness. Life science titles in the *LC Science Tracer Bulletin* series highlight notable reference works and major monographs in these areas. The Library's collections on biogeography, biometry, bioinformatics, bioethics, genomics, and molecular biology are also extensive and easily support the work of scientists and researchers in all areas of the life sciences.

Also of great importance are the materials the Library collects in the field of agricultural, ecological, and environmental sciences. These are shaped primarily by the research needs of Congress and other government agencies and notable for their broad appeal and usefulness. Emphasis has been placed on collecting materials that support research on current issues, legislation, and public policy. In recent years, materials on topics such as zoonoses and avian health, genetically modified crops, biodiversity, seed banks, heirloom varieties, sustainable food supplies, green roofs and land reclamation have been needed to meet the reference/research needs of staff, scholars, and to support the legislative work of Congress.

While the Library defers to the National Agricultural Library (NAL) in matters of technical agriculture and the clinical aspects of veterinary medicine, areas represented at the research level include American agricultural history, horticulture, conservation, and soil science. Indeed, these collections in agriculture and those in medicine complement and expand the life sciences component of the Library's collections. Materials relating to agricultural innovation, dryland agriculture, soil erosion, agricultural economics, public health, bioengineering, aging, medical economics, and the diseases affecting plants, animals, and man are extensive and have served as the basis for scientific treatises and reports, literature reviews, scholarly research, and Congressional debate. These materials are encyclopedic in nature, diverse in scope, and easily satisfy the informational needs of each of the Library's many constituencies.

B. Areas of distinction

The Library's collections of materials chronicling the botanical discovery of North America are particularly strong. The history of plant exploration and taxonomic botany has been captured in the scientific tracts of the great exploring expeditions and the transactions of botanical societies, lyceums, and herbaria and is highlighted in color-plate volumes by Isaac Sprague, Titian Ramsay Peale, Pierre Joseph Redouté, and Mark Catesby. Discovering, naming, and learning the uses of the flora and fauna of America sparked an interest in economic botany that is reflected in the collections by an abundance of material on plant utilization in commerce and industry, biotechnology, and ethnobotany. The Library's collections on herbals, food plants, and medicinal plants are described in some length in Leonard Bruno's *The Tradition of Science: Landmarks of Western Science in the Collections of the Library of Congress* (Washington, 1987) and in James Reveal's *Gentle Conquest: the Botanical Discovery of North America with Illustrations from the Library of Congress* (Washington, Starwood Pub., c1992). The Library's Rare Book and Special Collections Division holds over 450 rare botanical books, many of them renowned for the beauty of their illustrations and its Prints and Photographs Division contains hundreds of botanical prints and pictures of herbaria and botanical gardens.

Collections acquired chronicling the history of American and European agriculture, natural history, zoology, and medicine are also noteworthy. Some of the Library's treasures in these areas are also well-described in Bruno's *Tradition of Science*. Especially important for the early history of medicine and psychoanalytic thought are the Library's collections of the nineteenth-century physician Joseph Toner and the papers of Sigmund Freud. In addition to his own correspondence, Dr. Toner collected a large number of letters of doctors and prepared many bibliographic and biographical studies in manuscript form. The Library's psychoanalytic collections, which include the papers of Sigmund Freud and those of most of his European and American disciples, are among the finest in the world. Also included in the Library's holdings are the manuscript collections of botanists, biologists, zoologists, environmentalists, ecologists and conservationists such as, E. O. Wilson, Gregory Pincus, Jacques Loeb, T. Swann Harding, William C. Gorgas, Luther Burbank, William T. Hornaday, Gifford Pinchot, Frederick Law Olmsted, and C. Hart Merriam.

A cornucopia of source material can be found in the Library's extensive holdings of proceedings of academies of science, transactions of scientific and learned societies, reports of government survey terms, and accounts of scientific expeditions sponsored by natural history museums, zoological societies, and other organizations. The Library's collections of illustrated scientific publications contain many hand-colored plates of birds, fishes, insects, reptiles, and innumerable other orders of animals, providing an exceptional record of various expeditions and voyages of discovery. Among these scientific collections are pictorial works by John Gould, William Healey Dall, Alexander Wetmore, John J. Audubon, and Alexander Wilson. These treasures, along with the rich collections of correspondence, reminiscences, and biographical material from all periods, in many language and in widely-ranging formats, from print to electronic, provide historians of science, scholars, biographers, and researchers with unparalleled resources in the life sciences.

III. Acquisition Sources, Current and Future

The Library acquires materials in all formats and languages, e.g., print materials, microforms, audio, video, and electronic, and from a variety of sources, e.g., Copyright deposit, Cataloging in Publication (CIP), Overseas offices, purchase, gift and exchange. As more publications are issued digitally, the Library must ensure that all important and appropriate information is added to the collections and that the data formats are maintained to assure continued access to the digital information. Electronic obsolescence is not an option for scientific materials. As certain materials migrate from print to digital-only format, they are frequently collected into the Electronic Resources area of the Library, within the OPAC as an electronic link. These sources may be freely available, or may require a subscription, as in the case of many electronic resources. Both are actively collected, and will continue to be collected in the future.

Digital format has increasingly blurred the line between databases of citations, abstracts and full text, so that a given database may provide what is essentially an electronic journal for one title, while providing a citation, with no text, for another journal. Differences in periods of coverage also contribute to making a precise assessment of the number and nature of available electronic resources somewhat difficult, but several reliably strong sources for electronic materials in the area of the life sciences can be identified. The list titled Health and Biological Sciences (in Electronic Resources) can be helpful in identifying titles. Particularly useful titles include the subscription databases: *JSTOR*, *Academic Search Premier*, *Applied Science and Technology Full Text*, *Biological and Agricultural Index Plus*, *General Science Full Text*, *Biosis*, *GeoRef*, *Environmental Impact Statements Full-Text*, *ProQuest Databases*, *Readers' Guide Retrospective*, *Web of Science*, *Biological and Agricultural Index*, *Medline*, *HistSciMedTech*, *Garden, Landscape and Horticulture Index*, and *Digital Dissertations*.

Freely available electronic resources collected by the Library, that often have materials of interest in the area of the life *Agricola*, *Science.gov.*, *AmphibiaWeb*, *Avian Literature Database*, *Encyclopedia of*

Earth, Index to American Botanical Literature, EPA Science Inventory, Environmental History of Latin America, BioMed Central, Catalogue of Life, etc. Freely available resources such as these sometimes demonstrate that the overlap between web sites and online databases can again blur distinctions. Maintaining functioning links becomes part of the process of collection development and maintenance, as issues related to the capture and archiving of web sites continue to be debated.

Many books with CDs, DVDs, etc., received through copyright deposit are collected for the collections, as many of them are standard reference tools in the sciences. Because the technology for viewing these items are not generally supported in the Library's reading rooms, access to these materials is limited. Podcasts and webcasts produced by the Library are currently available on the Library of Congress web site. Increasingly, links to scientific webcasts and podcasts at other institutions will be collected by the Library as well.

IV. General Collecting Policy

The Library acquires materials in all formats, e.g., print materials, microforms, electronic resources, audio-visual materials. The Electronic Resources, Selection Guidelines, the Policy Statements for Web Capture and Archiving, the Policy Statement for Dissertations and Theses, and the "Copyright Best Edition" statement are used in conjunction with this policy statement as are the statements for Medicine, Agriculture, Veterinary Science, and Biotechnology, to maintain the Library's collecting strengths in the life sciences and to support the work of Congress, scientists, scholars, educators, and citizens throughout the country and the world.

The Library considers information about the life sciences from all countries in all languages to be significant and therefore collects materials in both analog and digital formats on a worldwide basis to ensure full representation of the substantial literature in these fields. Life sciences material in foreign languages reflects the science and governmental policy of those countries and includes data on the flora and fauna, natural resources, ecology, and conservation. It collects all important current reference works, monographs and serials in all languages in classes and subclasses relating to the life sciences as well as all U.S. Government documents, bibliographies, and indexes that provide access to the collections.

Some e-journal and born digital materials are collected at a lower level than their print counterparts, because the current Copyright law does not address the deposit of electronic materials. Also, some of the mechanics associated with the acquisition, storage and display of digital materials have not yet been resolved. As e-prints, podcasts, webcasts, and new technologies for creating life sciences material proliferate and the Copyright law includes these materials as depository items, they will be collected at the same rate as their print counterparts, using the same criteria.

The Library's life sciences collections are collected primarily at either the comprehensive level or the research level. The instructional support level is used for textbooks; laboratory manuals and study guides are collected at the basic level, those published to accompany textbooks are not acquired. The following list is arranged according to the major subclasses of Classes QH, QK, QL, QM, QP, and QR of the Library of Congress classification.

V. Collecting Levels

Natural history (General); Microbiology; and Biology (General)			
Class	Subject	Level	Comments
QH1-QH199	Natural history, biodiversity, nature conservation, biogeography, endangered species	5	E-journals born digital materials and ephemeral electronic materials are not acquired as widely as needed
Z7401-Z7409	Bibliography	5	General and special topics in natural history
QH201-278	Microscopy	4	
Z6704-Z6706	Bibliography	4	General and special topics in microscopy
QH301-705	Biology, biometry, population biology, evolution, genetics, cloning, genome, biodiversity ecology, bioethics	5	
Z5320-Z5349	Bibliography	5	General and special topics on biology, evolution, genetics, bioethics
Botany			
QK1-474	Botanical gardens, conservation, taxonomy, morphology phytogeography and geographical distribution	5	Economic botany is classed in SB107 E-journals, born digital materials, and electronic materials are not collected as widely as needed
OK475-989	Spermatophyta, gymnosperms, angiosperms, cryptograms, plant physiology and ecology	5	
Z5351-Z5358	Bibliography	4	General and special topics on all aspects of botany and phytogeography
Zoology			

QL1-355	Wildlife conservation, zoos, geographic distribution of animals	5	E-journals, born digital materials, and electronic materials are not collected as widely as needed
QL362-739	Invertebrates, chordates, vertebrates, and mammals by order and geographic distribution	5	
QL750-991	Ecology, animal behavior, anatomy and embryology	5	Economic zoology is classed in SF84+
Z7991-Z7999	Bibliography	4	General and special topics on all aspects of zoology
Human anatomy			
QM1-695	All basic anatomical systems, histology	4	
Z6662-Z6663	Bibliography	4	General and special topics on all aspects of anatomy
Physiology			
QP 1-348	General physiology, embryology, developmental physiology, kinesiology	5	E-journals, born digital materials, and electronic materials are not collected as widely as needed
QP351-499	Neurophysiology and neuropsychology, nervous system, brain, sense organs	5	
QP501-801	Animal biochemistry, organic substances, proteins, aminoacids, hormones	5	
Z6662-Z6663	Bibliography	5	General and special topics on all aspects of physiology
Microbiology			

QR1-502	Bacteriology, microbial ecology, immunology, virology	4	Virology collected at the 5 level
Z5180-Z5185	Bibliography	4	General and special topics on all aspects of bacteriology

November 3, 2008